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ORIGINAL ARTICLES.

THE TREATMENT OF ALCOHOLISM.

[No. II.]

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Two chief objects are to be aimed at in the medical treatment of alcoholic inebriety:

First, to remove from the patient entirely the diseased appetite or unnatural craving for alcoholic drinks, and make it as easy for him to abstain from them as if he had never used them. This constitutes the cure of alcoholism according to the popular notion, based upon the teachings of Keeley and his imitators, who recognize in inebriety only "the cry of the nerve-cells for alcohol," and pay little or no attention to the more radical and permanent changes which the drug may have produced upon the system.

Second, to remove, in so far as possible, the morbid conditions brought on by the use of alcohol, improve the nutritive functions, build up the general health, and restore the stability of the nervous system. This is a much slower process than the first named and cannot be fully accomplished in the short period which is usually devoted to the active treatment of inebriety; requiring for completion months or even years, instead of days or weeks.

If, however, the treatment of the disease of alcoholism ceases with the removal of its chief specific symptom, and before the patient has been fully restored to health, there is great danger that he will not continue in the way which has been pointed out to him, but will relapse into his old habits and bring about a return of the old disease. Just as pain imperatively demands opium in one who has often felt its pain-relieving power, so does debility call loudly for alcohol in those who know by frequent experience the sense of strength, elasticity, and well-being, which it brings. Indeed one of the chief sources of danger to a cured inebriate is a lowered standard of physical vitality, especially during that important period in which he is reconstructing his relations with himself and the world, forming new habits, and taking his place in society as a sober man and a good citizen.

Hence the practical necessity of what Dr. Mattison calls, in relation to mor-

phine patients, a post-active period of treatment, during which the patient, while relieved from the necessity of drug-taking, should be surrounded by favorable circumstances and hygienic conditions, in which undue nervous, mental and muscular strain must be avoided, the body built up, the mind strengthened and the man habituated to live without alcohol. It would, no doubt, be well if these results could be secured while the patient was yet under the eye and care of his physician; but as it is the universal testimony, even of those who most strongly advocate this lengthened period of institutional treatment, that it is practically impossible in the great majority of cases to keep patients for a sufficient length of time to bring about this result, except by legal commitment, and as it is equally impossible to strengthen a man's will-power when he is denied the power of choice, it would seem to be the part of wisdom to make the best possible use of the time which is voluntarily allowed for the treatment of this disease, and then to impress upon the patient as strongly as may be the course which he ought to pursue in future—and leave with him the responsibility of following it, as we are obliged to do in other cases.

Another important thing to accomplish in this connection, and one upon which the final result very largely depends, is to arouse the moral nature of the man, awaken in him a desire for a different kind of life from that which he has been living, encourage him to change his old habits and associations, and especially to strengthen his will-power to resist all inducements, from whatever source they may come, to return to his old practices. It is only when this can be brought about that permanently good results can be depended upon. Herein drunkenness differs radically from most other diseases. The distinction arises from the fact that drunkenness is not only a disease, but a vice as well; or to speak more accurately, it is a disease resulting from a vice. Indeed it calls for treatment from the threefold point of view of vice, habit and disease, and no method of dealing with it will ever accomplish satisfactory results, which fails to recognize its composite nature.

This is no new view of the case, let it be remembered, but one which was taught a hundred years ago by Dr. Rush, the great pioneer in this field. "Religious, moral and physical remedies," he says in speaking of the drunkard, "should be employed for the complete and radical cure of his disease." With all our added knowledge in this direction, we cannot improve upon this general statement to-day.

It remains to be said in this connection, that there are three classes of cases in which the result is more than doubtful, and from which the relapses mainly come. They are, those in which the man was originally a degenerate, mentally, morally and physically unsound and unwholesome, before ever he used alcohol; those in which the degenerative effects of alcohol have become too deeply rooted to be removed, and are too important to be overlooked, having produced serious organic disease; and those in which moral depravity dominates the man, and there is no real desire to escape the bondage of drink. In these cases a return to the drug is well-nigh certain.

In order to secure the best results from the remedies which were discussed in my previous paper*, as well as other measures which have been alluded to, or may be spoken of hereafter, it is necessary that they should be mixed, as Opie mixed his colors, "with brains." No unvarying formulæ, no mere routine methods, no treatment *en masse* will answer the purpose. The very first requisite for success is individualized treatment. The temperament, idiosyncrasies, history, and concurrent maladies of each patient must be considered. No two persons are alike, or require the same management. No single case will be benefited by receiving the same treatment throughout all its varying stages. Patent medicines, home treatments, and secret cures all fail of accomplishing the best results.

The first stage of the treatment in ordinary cases, is that in which the patient either drinks or desires to drink alcohol. The progress of this stage is marked by three objective points: the disappearance of the morbid craving for alcohol; the return of the normal appe-

* Medical and Surgical Reporter, Vol. LXXV, No. 11, page 321.

tite for food, with the power of digesting and assimilating it; and the coming of natural sleep, to restore the nervous energy and balance. When these three results have been secured the patient has taken his first long step towards recovery.

The change which takes place in a man when his abnormal craving for alcohol is leaving him is a very real and very wonderful change. While the desire continues the man is gloomy and morose, or fault-finding and discontented. Nothing suits him. His temper is uncertain. His word cannot be depended upon. He has no normal appetite, and his stomach stubbornly rejects food. His hand shakes, his eyes are "shifty," and his voice is hoarse and rough. All night he lies tossing and groaning, grasping at phantoms and shrinking from demons. By every test, mental and physical, he is a sick man. But as the craving leaves him his eye brightens, his skin clears up, the bloat goes down, and the redness leaves his nose. His appetite and digestion return, his temper and disposition improve. He sleeps sweetly and rises refreshed. In his face shines the light of a new hope, a new confidence in himself, a new purpose in life, replacing the look of despair and disgust which showed there but a few days ago. Then he felt himself to be suffering from the power of a disease which he could not remedy, in the grip of a habit from which he could not free himself, hopeless, helpless, despondent, a slave. Now he sees health coming back to him, hears the sweet voice of hope, is filled with courage, and feels himself free. Henceforward slowly but surely his nervous system regains its balance, and he stands once more a man among men, master of himself.

There are those, it is true, who would claim that this change is only a delusion, the result of a mental impression, an idea. He has been made to believe, they say, that he would be cured, and cured he is. Some hypnotic influence, according to these authorities, has been exercised over the drunkard, with the result that he has been made to think that he has lost his craving for spirits.

Now every physician knows how great is the power of mind over matter. Perkins' tractors, mesmerism, spiritualism, Indian doctors, seventh sons of seventh sons, and quacks of high and low degree all bear witness to the ease with which men are deluded, and their haste to delude others. But fraud has ever certain ear-marks, which are wanting here. Inebriety is as real a physical disease as is neuralgia, or dyspepsia, or paralysis. The remedies which cure this disease at the hands of one member of the medical profession cure it at the hands of every one who uses them wisely and rightly. They cure, as I have already shown, by virtue of well-known properties, which have been made use of for centuries. The faithless and doubting are affected in the same way as the expectant and impressionable. Strongest argument of all, in a large proportion of cases the result is permanent. And this proportion is larger when patients are treated by plain everyday methods on strictly professional lines, than when the element of mystery is made use of to bolster up a secret cure. None of these things are true of frauds, fakes, or humbugs. None of them are the characteristics of mental delusions. They are not the results of mind-cure.

The time occupied by the first stage of treatment varies greatly in different cases. It may be a few days only, and it may be several weeks instead. In the majority of cases it does not exceed one week. Advanced functional derangements often delay its progress, and may require special treatment for their relief before the central symptoms will yield; while serious organic lesions, especially of the heart, brain, or kidneys, either contraindicate the treatment wholly, or call for great care in its use, and require a longer time for its completion.

In a system saturated with alcohol, if a cure is to be effected, all the eliminatives must be kept active. The compound cathartic pill of the pharmacopeia, or some similar remedy addressed to the liver and gastro-intestinal tract, is almost a *sine qua non* at the beginning, and may need to be frequently repeated. From first to last, the bowels should move freely. The kidneys, too, should be kept active. Hot baths will aid elimination from the skin, and promote a cure. Sunshine, pure air and moderate physical exercise, aid in the building-up process. Violent physical, or severe

mental labor is injurious in most cases.

It is my usual custom to allow patients to drink whiskey, or that form of alcoholic to which they have been accustomed, so long as they desire it, and in sufficient quantity to keep them contented. But every man should be made to understand that the less liquor he drinks, the sooner he will be cured. It stands to reason that if a man wants to be cured of the liquor, or any drug disease, the longer he pours down the drug the longer it will take to cure him. Nevertheless, since nearly all patients desist of their own accord in a very few days, the moral effect is thought to be better than if they had been deprived of liquor while yet they craved it. It is a great satisfaction to a man to realize that he can keep a bottle of liquor in his room without any desire to drink it. Besides this, very few patients would voluntarily undertake the treatment if they knew that they were to be deprived of their drink at once. What they are seeking, is to be deprived of the desire for it instead. In a very few instances, however, the amount of liquor taken is so excessive as to practically neutralize the effects of the remedies given; and in these cases it may become desirable to restrict the quantity allowed, and limit the time during which it is permitted to be taken. When this is done, the system responds promptly to the usual remedies, and the desire is soon replaced by disgust. It cannot, however, be too strongly impressed upon both patients and the public, that the cure of alcoholism does not consist in putting a man in such a condition that he cannot drink alcohol, but only in one such that he does not need to drink it. The man who is determined to drink as long as he can and as much as he can get, while under treatment, is very likely to develop into the fool who can be relied upon to take a drink sooner or later after the treatment is finished, just to see whether he can keep it down or not.

On the other hand, I am bound to say that in those cases where the excessive drinking was caused by excessive craving, when that craving was removed I have met with some of the best results I have known. It is the man who has drank hard and suffered bitterly, who has known the depths of the degradation to which liquor reduces its victims, who when cured is most anxious to prevent a recurrence of the disease, and most careful to avoid temptation. A burnt child dreads the fire.

Save in exceptional instances, it is impossible to treat inebriates with success in their own homes. A drunkard cannot be depended upon to follow the plainest and simplest directions as to taking medicines; rather he can be depended upon not to follow them. He cannot usually be controlled by the members of his own family. However fairly he may promise, the fact remains that he is a drunkard and lacking in the power of self-control. It is therefore essential that he should be under the care of a physician, and subject to his control by day and by night. During the first stage he should be constantly under the eye of a trusted attendant, who must act as nurse to the sick and companion to the well, while at the same time he is prepared to be master of both, should occasion require. He must see to it that the medicines are administered at proper times, liquors furnished when called for, subject to proper restrictions, and special foods supplied to those whose weak stomachs and recent excesses will not permit them to sit at the common table and partake of the common food. For this purpose Valentine's meat juice, bovinine, bovox and malted milk are valuable and convenient forms. He must also guard against secret drinking,—since the treatment is modified by the amount of liquor taken—and break up any other bad habits and practices. Licentiousness in particular is often—even usually—associated with strong drink in bringing about the drunkard's evil condition, and no permanent cure of either can be looked for until both are abandoned.

A Serious Case.

Late one evening a doctor received a note from a couple of fellow-practitioners, saying: "Pray, step across to the club. We are one short for a game of poker." "Emily, dear," he said to his wife, "I am called away again. It appears to be a very serious case, for there are already two doctors in attendance."—*American Druggist.*

A NUTRIENT FOR IMPAIRED NERVE-TISSUE.

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About two years ago lumbarin was first introduced to the medical profession. Nearly 200 physicians have since tested the drug, and the reports are before me, which embody the results of their practical experience. A remedy which is no proprietary article, nor in any way protected by law, but a legitimate preparation of known composition[1], quickly takes its place among the medicinal substances in daily use, provided it produces the effects ascribed to it and claimed for it. There is but one restriction to the general employment of the drug in question; it is dispensed only upon physicians' prescriptions, and its sale over the counter is strictly prohibited, the laity being warned by a special notice on the label, not to use the medicine except under the directions of a physician.

Lumbarin has proved itself a nerve nutrient *par excellence*; its effects are permanent, and not a single injurious symptom has ever followed its administration in the many cases in which it has been given uninterruptedly for periods varying from one month to two years. Whether its success is due to the organic extracts it contains, or to their combination with pure phosphoric acid, I cannot determine at present with any certainty, but the results are there, and any confrère may easily convince himself by using the remedy on himself for the space of but one week.

The following may be looked upon as facts well established. Lumbarin brings about the most favorable results, if taken in doses of two and one-half fluid drachms three to four times daily, largely diluted in sweetened water and given immediately after meals, never on the empty stomach. The addition of syrup of orange peel bestows upon it a very pleasant taste. But the dose mentioned must not be administered at once; it is best to begin the treatment with half a teaspoonful or even less, and to increase the dose by fifteen drops every day or two, until the larger dose has been reached, which is then continued during the whole course.

Here the following rule holds good—between the ages of twenty and forty the larger dose should be persevered in for from three to six weeks; patients past the latter age may rely upon the continuance of the improvement gained only by adhering to the remedy, just as we are kept in a state of good nutrition only so long as we take care to provide for a steady supply of food. Either from overwork, from injuries received, or from constitutional defects, some centres of the nervous system seem to become exhausted more readily and sooner than others; this occurs normally with advanced age; they are not destroyed, perhaps do not become diseased, but their nutrition and with it their functions are interfered with. Supply them with the nutrition needed and the functional activity will soon revive.

Thus it is with the male sexual apparatus. Although its function should persevere, even if in a diminished degree, up to high old age, abuse in youth, the diseases to which this organ is specially liable, and many other causes exhaust the cerebral and spinal sexual centres. In uncomplicated cases, i. e., those in which there are no anatomical changes, no destruction of tissue and no other demonstrable causes, lumbarin will re-establish the function, impaired or lost. In old age, however, as above referred to, this restoration will remain effective only during the continuance of the remedy; so long, therefore, as the special nutrition is supplied. At a younger age it is only necessary to re-

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[1]Exact composition of lumbarin:

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Extr. guaranae	fl ℥ iv.
Tinct. nucis vomicae	℥ iii.
Acidi phosphorici puri	℥ vii.
Extr. medulla spinali	
arietina et testiculis . . .	
v. a. sterilisati	gr. cclvi.
Syr. cort. aurant	℥ iv.
Aquae dest. q. s. ad	℥ xvi.

M.

awaken functional activity; the nutrition of the sexual centres then goes on of its own accord, without any further artificial aid, in unison with that of the rest of the body.

I have not heard of a single uncomplicated case, in which, within at least one month, the functional vigor of the sexual organs has not been re-established under lumbarin. An existing stricture or the underlying disease of the brain or spinal cord, probably because concealed or obscure, is often overlooked, but with the removal of such a cause, if at all remediable, the effect of lumbarin at once begins to assert itself. So reliable is the action of this medicine, that it is useful for diagnostic purposes. If in apparently simple cases the desired result is not obtained within a reasonable time, or if within two weeks not the least improvement becomes apparent,—a decided increase of force in expelling the urine always being the first favorable symptom—the case is complicated by a morbid condition not yet detected.

And though even in cases of locomotor ataxia I have seen sexual vigor redevelop under lumbarin, we must not expect too much. One confrère informed me, that he, aged sixty-nine, had suffered recently from two apoplectic seizures in quick succession, and that, excepting a right hemiplegia and some aphasia he had recovered his usual health (?), but that after one month's trial with lumbarin he was sorry to state, that the remedy had thus far produced no effect!! He should have rejoiced at the want of success, because the excitement of the sexual act under such conditions could have but hastened his end.

Very favorable has also been the general effect of the remedy on the whole nervous system. Mental energy is augmented; after its use for some weeks all functions appear to act with renewed vigor; sleep improves, and any feeling of lassitude and malaise, that may have been present, disappears. It is probably to this general effect that the remarkable results of lumbarin in cases of the opium habit have to be ascribed. After the remedy has been taken in such cases regularly for months, in preference always at the times of the administration of the opium or its alkaloid, such patients may abstain from the narcotic altogether or take it in large doses; they feel neither its withdrawal nor any effect from increased doses. Lumbarin, indeed, seems to make them opium-proof. Experience has shown, that in these cases it is best to give lumbarin in full doses for a month and then to begin the steady withdrawal of the opium, while continuing the lumbarin. The latter gradually establishes an immunity against the narcotic, just as the swallowing of the snake virus seems to protect the individual, thus made immune, against the venom of the snake, only that here cause and effect depend upon different means. The reflex excitement and the other annoying phenomena, which usually prevent those accustomed to opium or its preparations from relinquishing the pernicious habit, never make their appearance after lumbarin has been taken for a period of time sufficient to produce its constitutional effect.

The length of that period seems to differ greatly in different individuals and to depend upon idiosyncrasies, the duration of the habit, the dose of the narcotic to which the patient has accustomed himself and the manner of its application—the hypodermatic method offering greater resistance to the treatment, than the internal administration of the drug. One observation here has been universal; those employing morphine subcutaneously, when lumbarin has once taken a full hold of their system, are enabled to substitute the internal use of the alkaloid without their incurring any suffering, because of the change in the method of employing the narcotic.

This remarkable effect of lumbarin in cases of the opium habit was accidentally discovered by a well-known physician, himself subject to it. He had taken lumbarin for a year because of its aphrodisiac properties—in these cases the sexual functions are completely dormant—and because of its general tonic effect, when one night he broke his hypodermatic syringe and had to take his accustomed dose of the narcotic internally. To his great astonishment the result seemed to be the same; being a man of keen perceptive powers he determined to try to omit the morphine altogether and those acquainted with the habit will imagine his pleased surprise at the absence of all

annoying symptoms on the withdrawal of the alkaloid. That man to-day is in perfect health, he has often taken in my presence six grains of morphia internally without showing the least effect, and he can omit the drug for so long a time as he pleases. He is still continuing lumbarin for its general invigorating influence.

In beginning cases of softening of the brain due to embolism, the intellect improves greatly under lumbarin, and in some very early cases the mental activity is restored completely. In chronic spinal affections some of the symptoms ameliorate; if there is no paralysis of the vesical sphincter, micturition becomes much easier, but, as a rule, all organic diseases of the brain or spinal cord are benefited but little, if any, by lumbarin, whose good effects can be relied only in cases of functional disturbance. It does not remove diseased conditions, but only provides with special nutrition centres, whose functional activity has been slumbering.

If a healthy person takes the remedy, an unusual activity in the male in the functions of the sexual organs and a feeling as if the individual was under the influence of a mild stimulant, are observed by the end of a week. A decided increase in the force of expelling the urine may be looked upon as a good omen; in all favorable cases this symptom shows itself by the fourth or fifth day of treatment. Lumbarin is no elixir of life, it simply strengthens the sexual organs, produces a state of immunity in cases of the opium habit and acts in many cases as a special nerve tonic. But while limited, the effects of the drug in its own field of usefulness and in uncomplicated cases are certain.

In conclusion it may be well to mention that its wholesale manufacture and improved methods have so reduced the cost of production, that lumbarin does not prove more expensive to the patient than the average prescription given by the physician. The greatest trouble we experienced was in obtaining at the time wanted a fresh supply of spinal cord and testicles. Then the great skill needed and the difficulty and loss of time met with in the preparation of the extracts formed another obstacle. When we first used it at the hospital it cost us between four and five dollars a bottle. That was the reason of applying to a chemist to manufacture it wholesale. Now a supply enough for eight days cost wholesale one dollar, and the manufacturers make seven cents on it. Whether they will continue long to bother with it I do not know. The whole is for the benefit of the profession and not for the pocket of any individual.

THREE CASES OF TYPHOID IN ONE FAMILY.

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In June, 1895, Mrs. C., age 50, occupied a cottage at Atlantic City, where it was afterwards learned a patient had died the previous season of typhoid fever. In four weeks Mrs. C. took the fever, and ten days later was brought to her home in the country. On the same day, August 6, I was called to see her. The fever was of the somnolent variety and ran a slow course, lasting in all three months. The temperature ranged from 101° to 103° F.; pulse, 90 to 100. There was not much suffering, but marked weakness and drowsiness throughout the disease. The patient took little notice or interest in herself or her surroundings. Diarrhea was at no time troublesome. One night during the sixth week I was hastily called to find the patient rolling in agony with cramping pains in the bowels. I gave instant relief by a hypodermatic injection of morphia, but in a few days the nurse called my attention to the fact that when the bowels moved a large quantity of fecal matter came out the vagina. On examination a vagino-rectal fistule, one inch in diameter, was found.

The typical petechiæ appeared the second week of the fever and continued eight weeks, sometimes being quite abundant. The disease ran a course of three months in spite of all efforts to break up the trouble. The points of peculiar interest in this case are:

(1) The very great and prolonged apathy amounting almost to unconsciousness.

(2) The perforation of the lower bowel into the vagina causing a fistula large enough to admit the finger.

(3) The prolonged recurring of the rash amounting in all to about sixty days.

(4) The great emaciation or physical waste, which was the primary cause of the perforation of the vagino-rectal septum. It was also shown by the loss of the hair and all the finger and toe nails.

Mrs. C. made a good recovery, even to the replacing of the nails and the closing of the fistula. The treatment and diet was that usually prescribed in such cases, care being taken to avoid all the coal tar preparations on account of the cardiac weakness. The fistula was closed by the local application of caustic and antiseptic injections.

Case II.—After coming to her home Mrs. C. was first nursed by her oldest daughter, Mary, aged twenty-five years; single. In three weeks the daughter took the fever, but in the opposite extreme from that of her mother. Her temperature was from 103° to 104° F.; pulse full and bounding, patient noticing the minutest particulars. Diarrhea, profuse and continuous. Spots appeared on the fifteenth day, and by the twenty-third day were so abundant as to resemble rash of measles. This was her time for menstruation, which did not occur, but a very severe hemorrhage of the bowel took place. So near as could be measured three pints of blood were lost in two hours. The lips and hands became bloodless, features pinched and drawn. No pulse could be felt in either wrist, a cold sweat coming out on the hands, arms and feet. On arriving I succeeded in arresting the hemorrhage, and by active stimulants and artificial heat revived the patient and by next morning she was able to speak. The next day Dr. Wharton Sinkler, of Philadelphia, saw the patient and her mother in consultation. At his suggestion granules of strychnia one-fortieth of a grain each were substituted as heart tonic instead of nux vomica strychnos. The granules are pleasanter to take and we can regulate the quantity of the drug better than by the tinctures. The daughter's temperature fell to 102° F during the hemorrhage and in a few days all the rash disappeared.

Twenty-six days later the temperature rose to 103½° and the rash came on again as abundant as at first. Twenty-eight days after the first hemorrhage or what would have been the next regular menstrual period, a second hemorrhage equal in quantity and effects came on. Nothing but immediate death seemed possible, but the same remedies brought about the same happy result, and the patient rallied. This is another evidence to the fact that in no other disease do patients approach so near the grave to return to health as in typhoid fever. From this time on she made a rapid recovery. The remarkable features of this case were the abundant rash and the profuse hemorrhage from the bowels occurring both times at the menstrual period, also the great emaciation, which was beyond description. During the twenty-eighth week of the disease, while blowing the nose, the nasal septum came out in the handkerchief and has never been replaced.

The treatment of this case was: Acetanilid and quinine to reduce temperature, listerine as antiseptic; digitalis and strychnia to sustain and control the heart's action; absolutely milk diet. Hemorrhages were each time controlled in half an hour after my arrival by giving one teaspoonful of turpentine at once, followed by ergot and ferri chloridum, stimulants, whiskey and aromatic spirits of ammonia.

Case III.—When Mary became ill the nursing fell upon the remaining daughter Nettie, aged twenty-one, single, in robust health. In three weeks from the time she became nurse Nettie was taken ill with the same disease, which ran a regular course of about thirty-five days with no special points of interest. Two sons and the husband, who assisted the nurses, had diarrhea, headache and slight febrile symptoms, lasting in each case about one week. I wish to say here

that I know of no home better located for fresh air and good drainage. Everything about the premises was examined and found scrupulously clean. No death had occurred in this house for over fifty years, although occupied by only two different families in that time. The best known hygienic measures were adapted from the start of this fever. Platts' chlorides, chloride of lime, carbonic acid, etc. were freely exposed and sprinkled about the rooms. All stools, bloody cloths, etc. were buried and disinfected at a safe distance from the water supply.

In reviewing these cases one notices the fact of contagion which developed in each of the three cases in three to four weeks. We had in these cases four trained nurses, none of whom felt any ill effects whatever. The greater anxiety and loss of rest of those who act as nurses rendered them more susceptible to the contagion of the disease in the room which cannot be rendered absolutely innocuious even with the greatest care.

THE NEURON.*

ALOYSIUS O. J. KELLY, M. D.†

Until within comparatively recent years the generally adopted conception of the nervous system was that its essential tissue was made up of two distinct morphologic elements, nerve-cells and nerve-fibers. The nerve-cells were supposed to originate, send, receive, and modify impulses. These were conveyed from one nerve-cell to another by the nerve-fibers, acting as conducting agents and serving to connect nerve-cell with nerve-cell. This transmission of impulses presupposed continuity of structure. We now know, however, that the nervous system is not made up of a number of nerve-cells maintained in continuity by nerve-fibers, but that it is composed of a number of distinct and independent neurologic units called *neurons*.

Each neuron originates as a unit, structurally independent of every other neuron, and as such it remains, despite its subsequent morphologic complexity. The essential parts of each neuron are the *nerve-cell* (in a restricted sense), the *axon* (axis-cylinder process), and the terminals of the axon,—the *end-tufts*. The nerve-cells are of various shapes and have received appellations in conformity therewith. The axon is a differentiated process of the cell-body. It may preserve its individuality and proceed as the axis-cylinder of a nerve-fiber, or it may immediately break up into numerous fine filaments. The axon always terminates in a free extremity,—*end-tufts* or *end-bushes*. Further, there proceed from the cell-body other processes known as *dendrons* or *dendrites;* and from the axon other processes known as *collaterals*. On the dendrites there are fine hair-like projections called *lateral buds* or *gemmulæ*, and at the branching of the dendrites thickenings known as *varicosities*. It is of a multitude of such neurons that the nervous system is made up.

Each neuron is always structurally unconnected with any other neuron. The relation that one bears to another is simply that of propinquity, or possibly contact. The function of the gemmulæ is to receive the nervous impulses from the end-tufts of the axon (for instance), and transmit them to the dendrites, whence they are conveyed to the cell-body proper. The impulse is further carried throughout the neuron by the axon, which thus serves as a cellifugal conducting apparatus; the dendrites transmitting impulses cellipitally. The impulse is delivered to a muscle-fiber, for instance, occasioning contraction by the terminals of the axon, which in order that it may distribute the impulse over a large area

*Abstract of an article read before the Philadelphia County Medical Society, November 25, 1896.

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divides into numerous fine filaments, the end-tufts. These latter, therefore, serve as *organs of emission* or *deliverance* for the impulse. The collaterals functionate as do the axons.

Without doubt the most important part of the neuron is the nerve-cell, with the dendrites, being the nutritional, trophic, receptive, and impulsive elements. The dendrites are parts of the cell-body, being split-up portions of its periphery. They resemble the cell-body in structure and in function. The nerve-cell has been aptly termed the vital part of the neuron. The axons, collaterals, and end-tufts, outgrowths of the cell-body proper, are of secondary importance. They conduct and deliver impulses to neighboring regions. The processes of the neuron are, as it were, projections of the cell-body into the various motor and sensory regions of the body. Thus, without regard to its topographic situation, there is no one part of the nervous system that is not in direct association with every other part. There is no one part that functionates absolutely independently of every other part.

The theory of the motility of the neuron aptly explains certain hysterical, hypnotic, and other functional states (sleep), and may also serve to account for certain morbid manifestations, the nature of which we do not understand (tachycardia)*. Various so-called system-diseases of the nervous system are now known to be due to disease of neurons functionally allied,—a system of neurons. The fact that the more distal part of any axon (as the axis-cylinder of a nerve-fiber) is the least resistant to the morbific influence of various agencies, permits of our comprehending the occurrence of peripheral neuritis due to alcohol, arsenic, etc. We have also been able to discover the anatomic basis of certain mental diseases.

*Kelly. Essential Paroxysmal Tachycardia. MEDICAL AND SURGICAL REPORTER, October 24, 1896.

CAN ASSIMILATION BE INCREASED BY REMEDIAL GYMNASTICS?

DR. HENRIC SPARRE, PITTSBURG, PA.*

Among the various processes by which the nourishing elements of food is transformed into fluid and prepared to enter the blood on its return to the heart assimilation is prominent. We must bear in mind how nature accomplishes this process to understand that it is possible to directly assist in this important work.

The chyle passes from the food matter into the epithelium, and since the motive power in the epithelium is suction, a serpentine motion of the intestines presses the food matter against the epithelium with sufficient force to bring the chyle to the surface in contact with the epithelicell.

Other things being equal, the amount of chyle absorbed by the epithelium depends upon the energy of nerve force, viz: Diminished energy, diminished pressure, consequently less chyle is brought in contact with the epithelium, and reduced assimilation is the result of weakened nerve force.

By pressing the epithelium against the food matter the chyle will be forced to the surface in connection with the epithelium with exactly the same result as if the pressure had been from within and induced by nerve force. An increased amount of chyle will be absorbed by the epithelium of the same amount of food matter contained in the intestines, therefore the assimilation will be increased. The nerve force to accomplish this has been supplied by the operator.

To carry the increased nourishment to different parts of the body we must be able to assist the blood circulation.

The following case amply illustrates the value of the application of remedial gymnastics for the purpose of promoting assimilation and constructive metamorphosis.

*From the Royal College, Stockholm, Sweden.

W. W., aged twenty-four years, weight, ninety-one pounds; height, six feet and two inches; large frame; occupation, a farmer; was poisoned at Homestead, Pa., in 1892. When sent to me he was totally disabled, had to be carried on a cot; legs drawn up at the knees at an angle of sixty degrees, muscles flabby, contracted and atrophied, body badly nourished; he had bed sores; feet very much swollen on account of weak heart; abdomen sunken so that the spine and abdominal aorta could easily be felt; intestines paralyzed; no action of diaphragm in respiration, which was very shallow; pulse, 140; respiration, 40; temperature, normal; power of speech entirely lost; bowels constipated; in fact there seemed to be a general suspension of all the vital forces; secretion and excretion diminished and general metabolism of tissues abolished.

Treatment began March 26, 1895.

For two weeks preceding his pabulum consisted only of the juice of two pounds of mutton. Laxatives were given for four days when an enema was necessary to provoke an evacuation, after which he had natural evacuations without medicine but with occasional enemata.

On the fourth day he began eating solid food as bread, eggs, etc., in addition to broth. Improvement from that time was steady. Within six weeks he took three square meals a day and two eggs between meals. Indeed, he was put on a home diet. He was discharged September 2, 1895, 134 treatments in all having been given. His weight increased from ninety-one pounds to 129 pounds. On leaving the hospital he could walk with the aid of crutches, his voice returned and general revival of vital forces. In March, 1896, his weight was 175 pounds, and he is in perfect health. He returned to the farm where he has remained without further treatment.

CURRENT LITERATURE CONDENSED.

Epithelial Sowing; A New Method of Skin-grafting.[1]

A method of skin-grafting has been conceived by F. von Mangoldt, (of Dresden), to which he has given the name of "epithelial sowing," which, for ease of execution and certain other advantages, merits careful consideration. The epithelial elements are obtained by simply scraping a healthy cutaneous surface.

For this purpose he prefers the external or internal surface of the arm. The chosen spot is carefully shaved and disinfected and then, with a sharp sterilized razor, held perpendicularly to the skin, the epidermis is scraped away until the papillary layer is reached. In this way a magma is obtained, composed of epithelial cells and extravasated blood, which is spread upon the surface to be treated and thoroughly pressed in with a spatula. This sowing is very simple in case of a fresh wound, but it case of an old or infected wound it is necessary to remove the granulations and thoroughly disinfect it.

In order to make sure that the epithelial elements adhere closely to the wound, it is advised to scarify it with a small and very sharp bistoury before spreading the scrapings upon it. The spot from which the epithelium has been borrowed is dusted with dermatol, covered with sterilized gauze and bandaged.

The grafted area is covered with strips of protective, over which an aseptic dressing is placed. The region from which the epidermis has been removed resumes its normal appearance in a few days.

The transplanted area, during the days immediately following the operation, looks as if covered with a pseudo-membrane; it loses its primitive brick-red color and becomes yellowish gray, a change due to the coagulation of the fibrin. At the fifth or seventh day the fibrin begins to disappear and the color changes to bluish rose, the first sign of the proliferation of the epidermic elements. Toward the middle or the end of the third week the surface is completely covered with epithelium.

After the fifth day the dressing is

1 Le Semaine Medicale. *The Railway Surgeon.*

changed every two days, and the wound is gently irrigated with a sterile warm, normal salt-solution. After the tenth day boric acid is dusted on. The new epithelial layer is at first thin and glossy, later it thickens and begins to desquamate. This desquamation is probably due to the absence of the glands normally present in the skin, should be combated with ointments of fat or oil.

Not the least of the advantage of this method is the fact that no pockets of necrotic tissue are closed in by the new skin, as sometimes happens in grafting by the Thiersch method.

Unusual Effects of Iodine.[2]

A case of rare iodine idiosyncrasy is reported by Dr. Tapp. A healthy man, age forty-six, laborer, had his right wrist slightly contused. Rest, a cold compress and massage improved his condition very soon, leaving slight swelling of the joint and tenderness of the adjacent soft parts. The official tincture of iodine was then applied. Seven hours later he was summoned to the patient whom he found suffering intense pain along the entire arm. The temperature of the painted portion was higher than of the surrounding tissue. In addition to severe boring pain, the patient complained of dizziness and a sense of dyspnœa. On the application of an ice-bag the pain in the arm subsided, but on the following morning the whole forearm was swollen to about four times the circumference of its fellow. The painted portion was highly inflamed and covered with a large number of vesicles partly with serous and partly hemorrhagic contents. Even slight contact caused severe pain. The axillary glands were slightly enlarged. The patient complained of severe headache, coryza, nausea and dyspnea. The urine contained traces of iodine. The vesicles were opened, emptied and the part dressed with an antiseptic drying powder. In about twenty-four hours the inflammation was found greatly reduced, the pain completely relieved, and all other symptoms considerably improved. Complete recovery occurred in about eight days.

In conclusion Dr. Tapp remarks that the application was made by himself, with a new camel's hair brush and but lightly painted. There was no solution of continuity. The patient had no preparation of iodine internally.

2 Translated for Pittsburg Medical Review, from *Therepeutische Monatschrifte.*

The Treatment of Crime.[3]

The scientific study of crime was initiated by the criminal anthropology of Lombroso and his followers. Dr. James was of opinion, however, that criminal anthropology had been of use not so much in itself as in the fact that it had been the initiating factor of something better —namely, the study of the criminal from the sociologic standpoint. Crime, he held, like disease, insanity and pauperism, was the result of the action of social factors. In social evolution, as in all evolutions, we had to recognize the survival of the fittest. The man who from faults of heredity or strain of environment, was, as it was termed, unfit, must succumb and became a victim of disease, a lunatic, a pauper, or a criminal, according to the circumstances of his constitutional condition or of his surroundings. The author then considered together disease, lunacy, crime and pauperism, and showed that year by year a certain fairly constant amount of each was fated to exist. He showed how they were all influenced by age, season of year, conditions of trade, etc. The interrelations of these were also demonstrated. From statistics it was shown how, for example, crime, lunacy and nervous diseases of all kinds were most prevalent at those seasons of the year when the death-rate and when pauperism were lowest, and *vice versa* at other seasons; how during cold weather crimes against property prevailed, how during warm weather there was a preponderance of crimes against persons. All these results pointed to the truth of what Quetelet had long ago enunciated—namely, "that the crime is the fault of society, the criminal is only the instrument." The means of best dealing with crime were then referred to, and the first indication in this matter seemed to be that the particular crime should be regarded as of less importance than the harmfulness or usefulness of the criminal to the society in which he lived. Those training for criminal law should

3 Dr. A. James before Edinburg Medical Society, *British Medical Journal.*

be educated in physiology, medicine and psychology, and the practical study of criminals by clinics in jails should be instituted, just as at present the practical study of disease and insanity was carried out in hospitals and asylums. All criminal investigations should be as public as possible, and for commercial crimes, such as fraudulent bankruptcy, breaches of trust, etc., publicity as regards income, working capital, etc., would be of value. He was strongly in favor of indeterminate sentences, and he held that the governers of prisons should all be trained in medicine and psychology.

The paper was discussed by Sir Henry Littlejohn, who dwelt on the defective mental condition of the inhabitants of our jails; by Dr. Glouston, who urged the lack of inhibition prevalent among criminals; by Dr. Batty Tuke, the President of the Royal College of Physicians, who urged that crime was a product of the evils of our social state; and by Lieutenant-Colonel A. B. McHardy, R.E., the Chairman of the Prison Commission for Scotland.

Appendicitis [4]

Two Berlin surgeons have contributed important papers. E. Sonneberg (*Berlin. klin. Wochen.*,) at the twenty-fifth anniversary of the German Society of Surgery, communicates the results of his work, and divides his cases into seven groups—(1) slight cases, with frequent slight "colic," without severe pain, swelling or fever, associated with trifling changes in the appendix; (2) cases with thickening and twisting of appendix, and slight adhesions, characterised by slight pain and local feeling of resistance between the attacks, and during an attack obvious swelling; (3) a condition similar to the last, but with the presence of fecal "pellets" in the lumen; (4) "empyema" of the appendix, often following ulceration and cicatrization; the progress of such cases depends upon the character of the pus and its organism; (5) simple appendicitis, with infective complications—(*a*) surrounding exudation, (*b*) lymphangitis of ilio-cecal vessels, followed by distant infections (pleura, liver, peritoneum), (*c*) gangrene of the appendix with peritonitis; (6) perforative appendicitis with peritonitis (local or general); (7) perforative appendicitis with multiple abscesses, peritonitis, abcess of liver or diaphragm, empyema, etc. Sonnenberg advocates intervention even in slight cases, especially when they run a chronic course; but the treatment should always be removal of the appendix, and not simply incision of the abscess.

J. Rotter (*Central. f. Chirurgie*) bases his paper upon 213 cases treated in the wards, medical and surgical, of the St. Hedwig Krankenhaus, Berlin, and the inclusion of the "medical" cases imparts a special value and interest to his work. With respect to the mortality of "perityphlitis," of the 213 cases reported 19 ended fatally (= 8·9 per cent.); diffuse peritonitis was present in 21 cases, and of these 14 were fatal, in spite of early operation; of 192 cases of circumscribed peritonitis, 106 (= 82 per cent.) yielded to non-operative treatment; of the remaining 36, 33 underwent operation, with two deaths, three patients dying without operation in the medical wards, so that in this group there were five deaths (= 2·5 per cent.); of these five, one certainly and two probably should by early operation have been prevented, so that in favorable cases the mortality would be one per cent. Taking the cases as a whole, the author believes that a mortality of 7 or 8 per cent. must be looked for.

The principle followed in treatment was immediate operation in general peritonitis, delay in localized peritonitis. To determine the frequency of recurrence, Rotter considers Sonnenberg's material together with his own, and finds this tendency in 21 to 27 per cent., usually two attacks, rarely three or more; recurrence commonly occurred within the first year; in half of the recurrent cases the appendicitis is non-perforative, and so the disease loses a large element of danger in such cases. Very important are the remarks on the spontaneous cure of perityphlitis; in considering this point only such cases are dealt with as came under treatment in the first six days of the disease, and of these cases there were 110 with 100 (or 90 per cent.) "spontaneous" cures;

[4] Edinburg Medical Journal, December, 1896.

if with these are grouped cases with general peritonitis in first six days of disease, one has "spontaneous" cure in 84 per cent. After showing the possibility of pus being spontaneously discharged by the bowel, by rupture of the appendix and external opening, by absorption by the peritoneum (more usual), Rotter gives a clinic picture of the disease; rejecting Sonnenberg's division into simple and perforative forms, he distinguishes his cases as localized or complicated by general peritonitis.

His remarks on the temperature are valuable, and in this relation he distinguishes various types of cases—(1) Cases with early fever (40° C.), defervescence on third or fourth day, and rapid recovery; (2) similar onset, but more prolonged fever, with fall of temperature about fifth day to 39° C.; of 14 such cases, three were operated on for abscess, and all cured; if fever still present on eighth day, such cases should be operated on; (3) temperature after fifth day still over 39° C.—infection virulent—prognosis unfavorable; of 11 such cases two died, two were cured without operation, four were operated on, and three recovered after long illness (perforation into the bowel); these cases demand early operation, on sixth day at latest, earlier if symptoms of peritonitis occur; (4) recurrence of fever after early defervescence; of six such cases four were operated on, one died from peritonitis; they should be operated upon on the first relapse; (5) general peritonitis, with serious infection, low temperature; in these cases the state of the pulse gives indications as to the severity of the disease; operation is absolutely indicated. Rotter would only operate on his cases when symptoms arise indicating danger to life or complications—the operation is not always easy, and many cases recover without operation.

In recurrent cases removal of the appendix should be carried out only after three attacks, or when after any attack there persisted tenderness of the appendix. General peritonitis may often be avoided in appendicitis by prolonged rest in bed, and by avoidance of purgatives. Gangrene of the appendix was met with five times—it indicates a severe infection; adhesion to the small bowel was twice seen, to the back of the colon once, to the rectum twice, to the sacrum once; thrice the appendix was found in right femoral herniæ, twice in inguinal herniæ. Twice intestinal obstruction existed, from formation of a kink in the small bowel; both patients recovered.

ABSTRACTS.

AURAL HERPES.*

Herpetiform eruptions are frequently observed on the auricle in cases of suppurative otitis media or externa, and true herpes zoster of the face occasionally involves the external ear, but true herpes of the external auditory canal and auricle is extremely rare. Its manifestations in this locality seem to be identical with the eruption when occurring on other parts of the body. The disease is usually seen in persons of a neurotic temperament, and while it may occur during perfect health, yet is frequently associated with some obscure conditions of malnutrition, as improper food or faulty assimilation. It is found most frequently when the digestive apparatus is at fault.

So far as has been ascertained, the exciting cause of the attack is exposure to cold, although the appearance of the disease in other localities has followed minor traumatisms or the application of irritants. The essential cause of the disease, as now generally accepted, is a neuritis of the superficial nerves. The principal nerves involved are the auricularis magnus and the auriculo-temporal.

The symptoms usually noted are plain,

* Lewis S. Somers, M. D., Philadelphia, in *The American Medico-Surgical Bulletin.*

generally preceding the appearance of the vesicles by several days, more or less constitutional disturbance, and finally the appearance of the typical eruption upon some portion of the auricle or external auditory canal. The pain is the most characteristic symptom in this locality, being neuralgic in character, and in several of the cases reported was not only experienced in the auricle, but followed the course of the nerve ramifications over the side of the face and down the neck. The temperature is increased, but usually falls to, or near, normal on the appearance of the eruption, occasionally the fever is so severe that it continues after the vesicles have developed, being usually due to a continuation of the disease by the production of successive crops of the latter, the disease then assuming more or less of a chronic character.

The skin of the helix and of the fossa navicularis is the portion of the ear on which the vesicles appear with most severity, and the severe burning pain complained of is usually over the anterior surface of the auricle, in preference to the posterior surface or external canal. This corresponds and may be explained by this part of the ear receiving its nerve supply from filaments of the auricular branch of the pneumogastric. In this connection Burnett suggests that the disease may stand in close relation to fibers of the sympathetic connected with the nerves mentioned as involved in the affection. Herpes of the auricle presents the same features that characterize the disease in other localities, but when the external auditory canal is the seat of the eruption the hearing is rendered less acute and subjective noises are complained of, depending upon the degree of involvement of the canal. In one case reported involving the membrane tympani, it produced considerable deafness and a sense of constriction of the head.

The eruption consists of groups of clear vesicles situated on a reddish base, and contain, when newly formed, clear serum, which later in the course of the affection may become turbid or purulent. The vesicles are situated in groups, which may coalesce and form bullæ if the disease is of much severity. Ordinarily the disease is unilateral. After the vesicles have existed for a few days they rupture, leaving small reddish or purple maculæ, the affection then amounting to a superficial otitis externa diffusa. This external otitis may persist for a considerable period of time, especially in individuals whose general condition is below the normal, the vesicles, after rupturing leaving behind eroded or ulcerated areas.

The pain, not always lessened or lost on the appearance of the vesicles, the neuralgic pain persisting sometimes for a long time after the eruption has entirely disappeared. The duration of the disease seems to be from two to three weeks, although the ulcers remaining on the auricle may persist for a considerable period after the acute symptoms have subsided. The diagnosis is difficult only before the appearance of the vesicles, as there is no local lesion present to account for the pain and systemic disturbance until they appear.

As diathetic conditions seem to play a greater or lesser part in the etiology of the affection, the condition is very apt to recur, often so many as two or three times before a complete cure is affected. This point should be carefully considered in the application of remedial measures directed to the cure of the disease. The treatment necessarily divides itself into two parts; that directed to any constitutional conditions which may be present, and, secondarily, attention to the local manifestations. The first measure should be a thorough cleaning of the primæ viæ by a saline purge, the diet being limited to plain food and reduced in quantity. If the pain is excessive or the temperature high, antipyretics may be administered, such as phenacetine or aconite. The latter in minute doses may be used every hour until its physiological effects become apparent, when the intervals between which it has been taken may be lengthened, so as to maintain the effect it has produced.

Before the appearance of the vesicles the pain may be mitigated by local applications of cold, either by cloths saturated with ice-water or bathing the parts in a cold solution of lead water and laudanum. When the vesicles have fully formed, every effort should be exerted to prevent their rupture. Anstie

recommends that the affected parts be covered with a protective layer of collodion, but the usual method is to employ some simple dusting powder, such as starch or zinc, and warn the patient not to touch the affected areas. If the contents of the vesicles should become purulent, probably the method of opening them is the best treatment. Occasionally ulceration may occur; when this cannot be prevented the small ulcers should be treated on general antiseptic principles, the location of the disease not affecting our choice of medication. A soothing ointment containing opium applied locally is of value when much pain is experienced. When the vesicles recur and the neuralgic pain seems intermittent counter-irritation over the affected nerves may be of value, the actual cautery or drugs, such as iodine, being used.

THE SERUM TEST AS A METHOD OF DIAGNOSIS FOR TYPHOID FEVER.

Further experience with Widal's serum test in typhoid fever tends to confirm its value as a useful aid to diagnosis, says the Boston *Medical and Surgical Journal*. November 9th, the New York Board of Health issued a circular to physicians inviting them to co-operate with the department in conducting experiments which will assist in the diagnosis of early or obscure cases of this disease. Dr. Herman Biggs, director of the Health Board's bacteriological laboratory, reported to the board recently that previous investigations showed that serum from the blood of typhoid patients has the power of arresting the active movement of the bacilli, and of producing peculiar and characteristic clumping of these organisms. It has been shown, he considers, that this reaction occurs frequently very early in the course of the disease, at a time when the physician by ordinary methods cannot determine certainly whether the patient is suffering from typhoid or some other form of fever. Also, that it is found throughout the course of the disease, and very often for a considerable period after complete recovery.

With the sanction of the board, Dr. Biggs has arranged to make a daily collection of slides furnished by physicians from the druggists with whom diphtheria culture-tubes are kept, and to promptly investigate and report upon them. It is believed that the scheme will be of material assistance to practioners in enabling them to promptly care for typhoid cases in the incipient stages.

At the Boston City Hospital the test has been made in about fifty cases of undoubted typhoid, and of a few other diseases. In almost all the response has accorded with the diagnosis as previously made, or reached later with a clearer view of the conditions.

Dr. C. L. Greene, of St. Paul, Minn., reports the results of the application of the test in twenty-five cases, eleven of typhoid and thirteen of other diseases; with positive results in all of the first class, and negative results in all of the second class. The reaction has been observed as early as what was supposed to be the end of the week and as late as the seventh week. To determine the true value of the test as a means to diagnosis further observations are desirable.

In a translation for the Pittsburg *Medical Review*, by Theodore Diller, M. D., he states that M. Catrin, at a recent meeting of the Societe Medicale des Hopitaux, stated that in his practice he had convinced himself of the value of the serum diagnosis of typhoid fever proposed by Widal. In twenty-five cases, not affected with typhoid fever, in which the test was applied, the results were negative; while in eighty-two instances in which typhoid fever was present the serum produced positive results. M. Catrin considers the clinical value of this method certain. Nevertheless in light cases of typhoid fever the reaction may fail; Catrin reports two such. The reaction is more decided when the fever is more grave and vice versa—a fact of

value in the prognosis. M. Catrin has seen the reaction produced on the fourth day of the disease. He insists on the advantages of this method; it is helpful, not only for prognostic purposes, but also for treatment to know definitely whether a given case be one of typhoid fever or not.

CONDITIONS WHICH MAY SIMULATE ORGANIC OBSTRUCTION OF THE LARGE INTESTINE.*

Fecal stasis, impediment to motion, or complete obstruction in the large intestine occurs more commonly than in any other region of the alimentary canal. In my own experience in a considerable number of cases I have found varying degrees of fecal stasis very much more common than is generally supposed, and when discovered, in cases not dependent on organic changes, quite easy of relief.

Let it be understood at the beginning that the large intestine is in function a reservoir or receptacle for the feces, as the bladder is for the urinary secretion; that it is a sewer vent only, receiving, lodging and discharging the alvine deposit. At the ileo-cecal portal digestion ends and the work of elimination begins. With a terminal segment of the alimentary canal so radically different in function from that concerned in the chemico-vital changes of digestion, it follows that we must necessarily note a wide difference in the histo-anatomical structures. And so it is in very many important particulars. To begin, it does not appear clear why a simple pouch for the feces would not have served the purpose of the long, convoluted, twisted colon, which from its shape, position and direction is constantly exposed to injury or disease. The distinguishing anatomic characteristics of the large intestine are its size, convoluted contour, its broad fibrous bands, the thinness of its walls, and its fixed position below and on the sides. In its walls dense bands of fibrous tissue abound to give it strength and elasticity. There is a scarcity of smooth muscle tissue, and its glandular structures are wholly mucous. If we open the abdomen of a living animal we may readily see or feel the peristaltic wave of the small intestine while the colon is quite motionless. It is therefore evident that movement in the colon is almost entirely dependent on extraneous influences. If we inject any non-corrosive toxic substance in solution into the healthy bladder it will be retained unchanged without entering the circulation; but not so with the rectal end of the large intestine which will quickly absorb it. In fact the rectum will absorb almost any substance reduced to a pulp or fluid; and there can be no doubt, reasoning from analogy, that under many conditions it will reabsorb the fecal elements.

The alimentary residue as it clears the colic valve is sent into the cecum, then it makes a detour first downward then up against gravity, the fecal current meeting resistance again at the hepatic flexure, to clear the splenic arch and descend to the sigmoid spiral and remain in this until sent into the rectum. The colon, of all parts of the alimentary tract, is more liable to atypical development derangement in its relations. This is particularly true of the *caput coli* as every surgeon well knows, from his experience with operations on the appendix. I have seen the large intestine in a female cadaver no larger than the ileum. We may find the cecum far away from its usual site, up near the right kidney down in the pelvis, or even over beyond the median line. And so will we not uncommonly find this organ passing out of the abdomen in hernia, reducible or strangulated.

The cecum, the ascending and the descending colon and the rectum are all more or less fixed by the retro-peritoneal tissues; a type of anatomic structure for the first time described by Mr. B. Alexander at the late meeting of the British Medical Association, '96. However fixed the attachment of the cecum, those of the transverse colon and the sigmoid are very variable. In all large,

*Thomas H. Manley, M. D., New York, in Cleveland Medical Gazette.

and in some moderate sized umbilical hernias, the transverse colon is as a rule found; and occasionally the sigmoid flexure makes its way out through an inguinal hernia on the left side. Dr Theo. A. McGraw, of Detroit, in a late able contribution on the surgery of the colon, calls attention to these anomalies and their importance in the diagnosis and treatment of colic lesions; and Jacobi, of New York, points out that an elongated mesentry plays an important role in infantile constipation, dependent upon impaction and displacement of the sigmoid. Mechanical obstruction of the large intestine varies in degree, situation and in causation. As an etiological element, everything will be excluded of an organic origin, and hence only those factors of an extrinsic source will be touched on.

The principal pathologic conditions of an extraneous order which play a dominant *role* in obstructing the fecal current are:

1. Atony of the bowel, degeneration, hemorrhoidal lesions.
2. Neoplasms, inflammatory deposits, ectopic or displaced organs.
3. Hernia, strangulated or reducible.

Atony of all the muscular tissues, smooth and striped, begins to make itself manifest about middle life; in some later than in others. Its effects are more pronounced in the female, and its influence is more pronounced in the large intestine than any other area of the digestive tube. The large intestine is widely expanded at its origin and its terminus; and in these situations do we most commonly find fecal stasis or impaction, succeeding enervation of structure. We not only find a diminution in sensation, but a marked impairment of motive power. Hemorrhodial degeneration of the ano-rectal verge consecutive to venous stasis, inflammation, thrombosis, hypertrophy, or atrophy is one of the penalties for the upright attitude and modern civilization and is a most prolific source of weakness in expulsive power, or of stenosis at the anal outlet.

Neoplasms, tumor formations, or deposits in any part of the colic arcade may interfere with or totally arrest motion within the lumen of the large intestine. This is liable to occur in any of its fixed areas. The female in consequence of the demands on her in pregnancy and the singular frequency of new growths and infectious deposits in her internal genitalia is most liable to physical impediments of this type. In the rectum too, the female is prone to a comparatively common type of fecal obstruction from uterine displacement backward. In some instances the hypertrophied uterus is completely retroverted and so wedged down by adhesions as not only to constitute a permanent barrier to defecation, but it may induce a persistent rectal irritation, and on examination be mistaken by the unwary or inexperienced for a new growth. Two such mistakes have come under my notice. Hernia is sometimes a factor in closing the large intestine, or impacting the fecal current. It is unusual however that life is seriously jeopardized by it except in the event of strangulation. When this does occur its evolution is more gradual than when the small intestine is extruded. It is the most dangerous of all the causes leading to extrinsic obstruction. I have seen it in strangulated umbilical hernia of women and in the inguinal of men, lead to death, through not having been recognized until it was too late to promise anything by operation.

Symptoms.—As may be inferred from what has been submitted in every case of the type of intestinal obstruction considered here, the constitutional symptoms occupy a prominent position although they are not well accentuated. Indigestion, constipation, auto-infection, reflex irritations and disturbances in organs remote from or contiguous to the large intestine may be noted. Our attention nevertheless is more commonly directed to the seat of trouble by local symptoms. Cecal impaction, typhilitis or appendicitis of subacute type in all stages of life give rise to a pain in the right side with a sense of weight and soreness over the right iliac fossa. Rectal impaction in the male may lend us to suspect prostatitis or hypertrophy of the prostate or cystic disease, the bladder being crowded over against the pubes and its capacity so reduced that it can hold but little more than an ounce at a time. Indeed it is my belief that a constant irritation is

propagated to the prostate by the rectal fascia in impaction of the rectum and is one of the most fruitful causes of inflammatory hypertrophy of the prostate. In elderly people, with vesical irritation of long standing, let us not overlook the possibility of pressure resulting from fecal stasis or impaction in the rectnm.

In the female, rectal inertia on the one hand and ectopia of the organs of generation on the other, produce reciprocally the most complex train of symptoms. In many women there is even in health a tendency to descent of the uterus with a permanent backward displacement of the organ against the rectum, and *vice versa*, especially in the multiparous, in consequence of damage to the *levator ani* in the parturient act. Atrophic changes follow, greatly reducing its expulsive power, and lending to a serious impediment in function, thus favoring a constant tendency to impaction of the rectum. There can be no question but many of the symptoms of uterine and vesical troubles in elderly women proceed from these causes.

Costiveness we might suppose should occupy an important position in the symptomatology of intestinal obstruction, but as this may proceed from so many diverse causes, alone it is unreliable.

In many we should place but little reliance on what patients tell us in respect to regularity of the bowels. Thus in one instance an old gentleman informed me that his valet gave him an injection every morning, it was always succeeded by a loose motion and he was regular; yet in consequence of the condition found on examination of the abdomen evidence pointed to impaction of the entire colon. I explored his rectum and there found an enormous enterolith solidly wedged into the pelvis. It was as large as a fetal head and had to be split in pieces with a mallet and osteotome before it could be removed. He assures me that he must have carried it for fourteen years, as during all that time he had most troublesome vesical irritation and tenesmus. It was most extraordinary in this case that with the exception of local disturbances, his health did not suffer.

Diagnosis.—We must rely on physical examination very largely in ferreting out the pathologic basis of these troubles. Surface and rectal examinations are our main reliance; but it must be conducted with method and skill. In the thin subject we may receive much positive information by inspection, percussion and palpation of the abdominal walls. By these means we may often detect cecal impaction, a condition which Sir Thornley Stoker, of Dublin, maintains is not only a most prolific cause of typhlitis and appendicitis but is often mistaken for it, and hence he advises in doubtful cases to explore for it, and if present, thoroughly to clear the large intestine by turpentine enemata. By this means alone, in his own hands, he has cured several. Sigmoid impaction or volvulus might be mistaken in the female for new growths or pus collections and can only be differentiated by a physical examination.

Rectal examination is more valuable than all others combined. We may examine by the finger alone in the rectal pouch or by conjoined bimanual examination. Before we begin, the bladder should be emptied. In the female we are enabled to make our work of exploration more thorough and satisfactory through utilizing the vagina. In this examination, we must depend quite exclusively on digital exploration, as the speculum or other instruments will afford little, if any, aid, while on the contrary their untimely or unskilled use in inexperienced hands may work great evil.

Dr. Thomas More Madden has recently received from the Royal University of Ireland the degree of M. A. O. (*Honoris Causa*) or Master of Obstetrics. Dr. More Madden has a world-wide reputation as an obstetrician, and besides a well-known treatise on Clinical Gynecology, is the author of several other standard medical works. He has been President of the Obstetrical Section of the Academy of Medicine, and Vice-President of the British Gynecological Society.

Guest—"Am I the unlucky thirteener?"

Host—"No; you're the lucky fourteener. We invited you to fill the gap."

Guest—"All right. I've brought it with me."—*Detroit Free Press.*

CAUSES LEADING TO TUBERCULAR INFECTION.*

About one-fourth of the deaths from septic diseases in the United States result from tuberculosis of the lungs. Wherever civilized communities are found, and human beings remain settled in one place for any length of time, there the infectious microbe which causes this disease finds it way. Tuberculosis has become almost a household disease in many communities, and thousands of families throughout the country have their tubercular member, who is endangering the health of the others in the household.

The disease germs are taken into the body by breathing infected air and eating infected food. The air most frequently becomes infected from dust in which is mixed the dried sputum of consumptives. In every community there are many such patients who go from year to year coughing and expectorating wherever they happen to be. This sputum dries, and is broken up into fine particles, which rise whenever the dust is disturbed, and are breathed into the lungs of all who may come within its reach. Thus does the tubercular patient infect not only his friends, but re-infects himself.

It is in this way that so much of so-called hereditary consumption occurs. It is a very rare occurrence for a child to be born tubercular, even when the parents are so, although many come into the world with a strong tendency in that direction; that is, they do not resist the disease well, and when exposed to the infection easily become diseased.

Such children are apt to become very rapidly infected during the first year of life, and especially during the second, third, and fourth years. After they begin to play on the floor, they are almost continually in the dust-laden air. The little child naturally puts everything into its mouth; and when it drops its toys or anything it has in its hand on the floor, it picks it up and puts it, all dust-laden, back into its mouth. If this dust happens to be full of dried and pulverized tubercular sputum, as it is apt to be in the home of the careless consumptive, the little one swallows the poison, and being already pre-disposed to the disease, it readily becomes infected with it. Thus the parent not only bequeaths to the child a tendency to the disease, but carelessly surrounds it with an atmosphere of disease germs, when a little care and painstaking might easily have spared the little one this danger to life. The tubercular germ, when dried, will retain its vitality for many months, and be ready for development whenever it finds a suitable soil.

Tuberculosis in adults is most frequent in the lungs, but infants and children are often infected in the glands of the neck, the membranes of the brain aud of the bowels, and even in the structure of the bones. In fact, at no age is there any membrane, gland, or other organ of the body, but is liable to become infected with the tubercular virus. The fact that in adult life the infection of the lungs is so much more frequent than that of the other organs, would seem to indicate that the disease was most usually due to inhaling the germs.

The tubercular germ, fortunately, does not increase outside the bodies of men or animals; and when exposed to sunlight and moisture, its infecting properties are soon destroyed. When it is kept dry, and in darkness, however, neither heat nor cold seem to affect its vitality.

While this germ is always the source of the disease, there are certain causes which predispose to it, or fit the body for the germ to grow in it. Whatever tends to impair nutrition so weakens the structures of the body that the glands of the lungs and other organs soon become invaded. The great majority of cases of consumption and other tubercular disorders are preceded by disease of the digestive organs. The patient's general health failing because the digestive organs do imperfect work, all the cells and tissues of the body become enfeebled, and unable to destroy the disease germs which may find an entrance into the body. If the struc-

*Good Health.

tures are healthy, these germs are soon destroyed, but if weakened by disease, the germs grow and multiply, until in time the body is destroyed.

All chronic diseases, as valvular heart disease, Bright's disease of the kidneys, disease of the liver, and ailments of the digestive organs, are predisposing causes of tuberculosis. Intemperance both in eating and in the use of stimulants is also a very active agent in bringing about conditions conducive to this disease. Among the lower classes of the large cities, where intemperance, licentiousness, and kindred vices prevail, consumption of the lungs is a very common disorder; and poverty and want furnish most favorable conditions for the spread of the infection.

Overwork and want of sleep, sedentary occupations, and living and working in badly ventilated shops, factories, and stores, where successive generations of consumptives have worked and expectorated on the floors, and the buildings have become thoroughly infected with the tubercular bacilli, are all conducive to the disease.

Close confinement in prisons and nunneries tends to breed tubercular disease. It is often very prevalent in badly built prisons, and is the disease from which the greatest number of the sisters in convents die. Churches, theater buildings, lecture-halls, and club-rooms that have been used for many years, and were shut away from the sunlight, being seldom properly ventilated, furnish excellent hiding-places for tubercular and other disease germs.

Physicians and nurses often receive the infection from the patients they are called upon to care for professionally. Especially is the nurse in a consumptive's family exposed to the danger of contagion. The patient may have been long ill when she takes charge of the case, and may be but one of several members of the same family who have died of tubercular disease. The whole house may be infected when the nurse comes into it; and though she may do her best to destroy the infecting material, and to keep her patient from still further infecting the surroundings, the indifference and carelessness of the family as to the danger of contagion may overthrow the results of all her efforts.

During the past half-decade many cases of tubercular disease have begun after the debilitation due to the influenza, or la grippe. The pneumonia which so often complicates this disease leaves portions of the lungs consolidated, and at these points the tubercular germs readily find a starting-point, and soon there is a breaking-down of the tissue, and an abscess is formed. This is the history of many cases met with in general practice. Mothers debilitated by too frequent child-bearing, or overworked when nursing their children, are very frequent victims of consumption. The overtaxation and persistent application to business practised by so many men in the pursuit of wealth often undermines the health, and invites the attack of the disease.

But while all these conditions predispose to tuberculosis, the disease cannot really exist without the germ which produces it. The ability to resist the disease is in proportion to the integrity and soundness of every tissue and organ of the body; therefore, whatever operates to destroy and lessen the number of germs in air, food, and drink, and whatever leads to the promotion of general good health, will tend to finally stamp out this great white plague, consumption.

To His Delinquent Patient.

If I should die to-night—
And you should come to my cold corpse and say,
Weeping and heartsick, o'er my lifeless clay;
If I should die to-night—
And you should come in deepest grief and woe,
And say, "Here's that $10 that I owe,"
I might arise in my great white cravat
And say, "What's that?"

If I should die to-night—
And you should come beside my corpse to kneel,
Clasping my bier to show the grief you feel;
I say, if I should die to-night—
And you should come to me, and there and then
Just even *hint* 'bout paying me that ten,
I might arise a while—but I'd drop dead again.

—*Gross Medical College Bulletin.*

A girl will mount, and a girl will scorch,
And a girl will ride all day;
But she can't carry water to scrub the porch,
Because she ain't built that way.

—*Medical Age.*

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PHILADELPHIA, SATURDAY, DECEMBER 5, 1896.

A CARD.

The Publishers deplore the extraordinary delay in issuing the REPORTER for November 28th. The unprecedented lapse was the result of circumstances unforeseen and therefore unavoidable. It is proper to state that the responsibility does not rest with the editorial management. The journal reached the press-room on time. There it encountered a series of mishaps which culminated in the necessity for re-printing an entire form and re-binding of the whole edition. The changes necessary involved delay in the issue of the present number also, and may slightly retard that for December 12th.

In this connection, the Publishers would announce that the present method of issuing and mailing the REPORTER on Saturdays has proved unsatisfactory, and hereafter it will be mailed at least twenty-four hours earlier. The day of formal issue, however, will remain unchanged. With the new year, a readjustment of our working facilities will be effected, which will obviate the probability of a recurrence of the present annoying contingency.

EDITORIAL.

SKIMMED AND SEPARATOR MILK.

Of all the advances made in modern restrictive laws, none have a more marked effect upon the welfare of the race than those which are included under the acts for the supervision of food products and the regulation of their sale. Heredity doubtless has its influence upon the individual, but his bone and sinew, his blood and flesh, are, directly or indirectly, derived from the materials he eats, modified it is true, by various environments but not dependent upon them.

The regulatory laws upon the quality

of milk, which forms so large a part of human food, are particularly worthy of note, and that there has been a marked progression in the average status of human health from the jealous oversight that has been kept over the dairy products alone will be universally conceded. Before the interference of the law in this matter, various and sundry aqueous mixtures were offered as the lacteal fluid, many of them containing ingredients injurious to the children who were the chief consumers, and others deprived of constituents increasing the value of the product, if not necessary to its usefulness. Under the wise provisions of the law, milk is no longer colored by various vegetable and mineral substances to simulate a richness it does not possess, nor may the proverbial chalk give body to the water added to increase the bulk. A certain percentage of cream can no longer be abstracted and the product sold as pure milk, and even a definition is made of the properties of the by-product, skimmed milk, that its purchasers may not be defrauded of their just dues.

For years this city was made the dumping ground of all the creamery refuse for miles around, much of it being bought by dishonest dealers with a view toward blending it with their supplies and selling it as pure milk, or of offering it as skimmed milk, and thus making a handsome profit. At the first glance it does not seem as if there were any great difference in food value between the milk from which the cream has been removed by a skimming process, and that from which it has been separated. Yet a moment's thought will convince that no process of hand skimming can succeed in removing all of the fatty constituents of the milk, at least not while the residue would be left in a sufficiently sweet condition to be fit for sale. On the contrary, one of the chief points claimed for the separator process is that it does practically remove all the fatty element leaving only about .003 by weight of fat, and an infinitesimally small proportion of cream.

The chief digestibility of milk depends upon the presence of these same fatty elements. A comparison is easily made. Milk when it enters the stomach is at once coagulated into a curd. The curd from rich milk or milk containing a large proportion of fat, is a soft, easily separable mass, while milk from which all the fat has been taken becomes a hard leathery curd, upon which the usual macerating and churning action of the stomach makes little impression. Pure milk, hand skimmed milk, and separator milk, placed in test tubes, and treated with gastric juice will show a marked difference. The curd of the first will have the globules of fat thoroughly disseminated through it, and when rubbed between the finger and thumb will readily disintegrate into small particles. The sample of skimmed milk will form a harder curd, owing to the absence of so much of the fat, yet can be disintegrated with the exercise of more force, though a thorough disintegration will take more time. The curd of the separator milk will be tough and leathery, and cannot be brought to a condition resembling that of the pure milk curd even by the application of masticatory force.

In such cases as have come under the consideration of the law in the matter of arrests made upon the charge of substituting separator milk for skimmed milk, the defence has been set up that the nutritive value of the separator milk, tested by the food units present in a given bulk of solid material, or by the relative cost of the bulk from which a pound of solid nutrient matter had been obtained, was greater than either whole milk or beef. That there is false reasoning here

is apparent, but the laity, not reasoning readily upon such matters, seeing this bald statement not denied, might readily be brought to think that the cheaper product might be scientifically the more valuable. The speciousness of the arguments advanced lies in the fact that not all the food units present in any given bulk are always available. Sawdust contains many of the elements that are also present in our most valuable foods, but one might feed a child on any proportion of sawdust with the only result of starving to death the subject of the experiment. There may be a larger proportion of calories of potential energy purchasable for a given sum in separator milk than in either whole milk or in beef, but owing to the indigestibility of the curd there will be a far less number available, and hence, for the expenditure of the same sum, there will be a literal obtaining of less nutrient value.

Bulk, more than price, has its effect upon the nutrient value. A man eating a pound of beef will be in far better physical condition, to say nothing of his comfort, than another man who has drunk the five and one-half quarts of separator milk which will give the equal amount of solid constituents. And of these potential units those of the milk will require in their release the expenditure of more time, more energy, and even then not so great a number will be liberated. This comparison of value does not take into account the fact that so large a bulk of liquid food will abnormally distend the stomach, leading to various serious disturbances of that organ, overwork the kidneys and other excretory organs, and generally lower the tone of the system. Also the fact that so much energy must be used to liberate the units of milk necessitates the leaving of less for other functional activity, and there is after all only a very small percentage of profit for the system.

In a mixed diet separator milk has its uses. Its sale at a proper proportionate price and as separator, not skimmed milk, should not be prohibited, but all opportunity for its substitution for and sale as a more valuable product should be guarded against. Thus only will the public weal be properly conserved. No effort should be spared to make operative the more admirable features of the present pure food law, and to further amend and improve its provisions where they fall short of the highest standard of excellence, and in these matters the medical profession can be of the greatest assistance. To afford such assistance is not only a privilege but a duty, and a duty whose neglect reflects upon all concerned.

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated meeting, November 25, 1896.

The president, Dr. J. C. Wilson, in the chair.

Discussion on the paper of Dr. J. T. Rugh on "Eight Primary Movements in the Treatment of Curvature of the Spine.

(Read November 11, 1896).

[See page 673].

Dr. De Forest Willard said that Dr. Rugh has done a valuable service in systematizing and classifying the movements for the rectification of scoliosis, for it is essential that there shall be some definite plan. While no two cases of scoliosis can be treated exactly alike, as the curves will differ in each individual, yet there should be a definite and specific object in view. It is difficult for the

ordinary practitioner, unless he has given the subject great attention, to understand exactly what is to be accomplished, and more difficult to accomplish the result after deciding upon the treatment necessary in that particular case. The curves differ so greatly in each that they require especially careful study to decide in the first place the method to be employed in the rectification. It is simply impossible for anyone to decide unless he examines the bared back of the individual and examines it most critically and carefully in the various positions of sitting, standing, walking, bending, etc. Unfortunately, many of these cases occur in young girls at the age when they are particularly modest in the exposure of their backs, and yet it is absolutely necessary that these movements shall be studied and regulated by the physician, to accomplish results that will in that individual best overcome these curves; it is therefore essential that they be tested with the posterior aspect of the trunk uncovered,

The restoration of normal movement and the relief of rigidity are the important portions of the treatment. It is the rigidity which is so difficult to overcome, particularly when rotation has occurred. In the general profession the distinction is not made with sufficient accuracy in regard to the cases of slight functional lateral curvature and those in which rotation has actually taken place. All who have experience in this disease know that the profession is too prone, upon the detection of a slight functional lateral curvature, to suppose that the application of an apparatus will assist or cure the individual. There can be no greater fallacy. No case of functional lateral curvature was ever benefited in the slightest degree by an apparatus. Very many have been injured and very many rendered hopeless by the rotation that has occurred after the apparatus has been applied. The only method by which a slight functional scoliosis can be corrected is the restoration, in the first place, of the muscular balance of the two halves of the body and the restoration of curves to their normal position. This can only be accomplished by muscular action, by the tonus of that muscular action. This is to be brought about by special gymnastic movements, not by general calisthenic movements, although these come in sometimes with good effect in producing increased tone of the general muscular system; but the special movements set forth by Dr. Rugh are upon the plan that every one must adopt if he expects to cure these cases and protect them from relapse. Each surgeon will probably adopt variations of these movements, but their general purpose and plan will be the same.

Posterior and lateral rigidity are most marked and these are the two conditions which must be overcome, so that the flexibility of the spine in these directions shall be made more in accord with the normal. When the normal condition is restored, the individual is cured for the time being, but not permanently. It is exceedingly important that these cases should receive for a long time careful oversight, and that they be watched until they have attained full growth. The girl should not be allowed to become careless in regard to her walking and standing, or in regard to her muscular exercises, until she is eighteen or twenty years of age at least. The muscular tone must be maintained by appropriate exercises, even after the case is considered cured.

In cases with rotation, the question of apparatus may be relegated to the individual ideas of the person treating them; there are cases in which apparatus does possibly assist in giving a better form to the individual. That, unaided by special muscular exercises, it ever benefits a rotated spine is not likely. It is simply a support, to give a better conformation in adults exteriorly, or to hold what has been gained by gymnastics, and it is perfectly proper in old and fixed cases. But in cases in which cure is expected no dependence should be placed upon it, without the added effect of regulated movements. With regard to light and heavy gymnastic exercises there is, of course, the same difference of opinion as there is in regard to heavy and light gymnastics in general. A succession of light movements systematically repeated is, however, far preferable to any system of heavy gymnastics, unless an individual has the time and can give herself absolutely and entirely to this work; but, unfortunately, the majority of cases afflicted with this condition are not able to do this.

DR. H. AUGUSTUS WILSON said that gymnastic exercises are capable of producing and have produced more serious damage and more permanent injury than do properly applied remedial gymnastics. Especially is this noticeable in spinal curvatures in general, because it is now generally understood by the laity that remedial gymnastics give the best results, the more quickly obtained and with less danger of relapse than almost any procedure that has ever been advocated for the treatment of rotary-lateral curvatures. It, however, is very much like the painter, who, when asked how he was able to obtain such wonderful effects, replied that he mixed his paint with brains, and this applies with equal force to gymnastic exercises. The serious danger to be produced by gymnastics has been caused by lay administration, absence of system, absence of any scientific, rational basis and the necessity for resort to first one textbook and then another to obtain a series of exercises that are empirical, and without apparent basis. In gymnasiums and so-called physical institutes, such a plan is carried out, and when the various systems or series of exercises are exhausted there is nothing further to be done. The directors of these institutions are practitioners of medicine, but without medical education and training and therefore without a license to practice medicine. When cases come under the direction of these untrained (at least medically untrained, al-

though possibly well trained as far as gymnastics for the normal individual are concerned) persons, take, for instance, cases of lateral curvature, they put them through a system of gymnastics whether properly applied or not and turn them out at the end of a year "strong, well and cured" patients (?). It has been Dr. Wilson's misfortune to have seen at least twelve cases in which conditions other than scoliosis were present (several were cases of Potts' disease, one a case of comparatively recent fracture of the lumbar vertebræ) and they were all put through the most severe forms of exercise, pulling heavy weights, etc. As an explanation of the plan pursued, reference was made by the gymnasium teachers to some six or eight text-books from which exercises had been taken and advice for curvature of the spine followed. The result has been that, as in the case of the painter referred to, the colors were not mixed with brains and the subject of gymnastics was brought thereby into contempt.

Dr. Rugh has done a great service in placing before the medical profession a definite basis for treatment in cases that are susceptible to it. He has done one thing more by showing how to give the patients themselves an incentive to further work and exercise in the right direction, always under the supervision of a physician. One of the most difficult things in the world to accomplish in physical training is to give the patient an incentive to act in co-operation with the physician in the matter of these exercises. To tell the patient to go to a machine, for instance, and pull chest-weights a certain number of times, will, after a time produce definite results, not always beneficial. If the patient knows that the effect to be produced on himself is a certain one, he will watch constantly to accomplish this, and this co-operation of the patient will far more efficiently and satisfactorily aid in effecting a good result. In this way it is possible for the patient to be instructed by the physician at the right time that eight primary movements of the normal spine constitute the goal to be sought in the correction of these abnormal spines and they will work toward this end and it will enable them to go on far more rapidly, intelligently and satisfactorily.

One of the conclusions in Dr. Rugh's paper, is so important as to deserve special attention, that is, "to make this basis so simple that every physician can readily grasp the underlying principles," and, with the principle in hand, the physician will be able to modify the monotony of forms of exercise to produce important results.

The word "cure" has never been clearly defined. There often seems to be a mistaken notion that cure means entire restoration to normal condition and normal function; such can hardly be the case, or else the cures constantly reported are not cures. Cure must mean simply arrest of destructive processes and restoration as far as possible to a normal condition. If such is the case gymnastics certainly offer the best means of obtaining a cure in rotary lateral curvature, because while they may not and cannot in ultimate bone-deformity of spine produce a restoration to the normal condition, they will produce the nearest approach possible to the re-establishment of normal function and general appearance. One of the most serious mistakes that it if possible to make is to attempt to combine forms of gymnastic exercises, as has been suggested, with directions that the spine should be held straight during the interim by braces and appliances. It is granted that during this interval of the remedial gymnastics false postures may be assumed, but the gain in muscular coordination and improved mobility of the spine is largely lost when restraint of movement is induced by apparatus.

The spine is simply a series of joints, the whole being for convenience considered to be in the form of one joint. Any joint of the body will be described as to its functions just as the spine is. If a joint becomes ankylosed the restoration to normal function will be obtained by following the normal movements, and the same course must be followed with regard to the spine. The more this subject is studied the more it will lead physicians to discourage the disastrous damage of the more or leas hap-hazard methods of applying gymnastic treatment at the present time. Such powerful therapeutic measures as remedial gymnastics should be administered only by competent physicians familiar with the pathologic, diagnostic, and physiologic aspects of the subject.

Dr. J. K. Young said that orthopedic surgeons have for many years been aiming at the action of the muscles, the complicated combined action of muscles which are exercised. There are at least eight different curves produced in lateral curvature. Very few of these are simple or primary, but they are usually combined together in some form, and the most common form of all is right dorsal primary scoliosis. Surgeons who treat these cases usually combine exercises, so as to fit the particular form of curvature. In this particular form of curvature the object aimed at is to develop the muscles that are weak, to lengthen short muscles and to shorten long muscles, to correct malpositions of the pelvis and the different changes that occur in association with this curve. In right dorsal lateral scoliosis there are on the concave (left) side a number of muscles that are shortened because the bones are too close together. On the other (right) side there are a lot of muscles that are stretched. One limb is shorter than the other. This has usually been spoken of as a short limb, but Dr. Young was inclined to think that in the functional forms it is a long limb. The limb can be shortened on one side and the pelvis may be straightened and fixed firmly in that position. If the muscles of the extremities are well developed, then there is a foundation to build a straight spine on. The curvature of the spine can then be corrected. By plac-

ing the patient with the low shoulder high, with the left arm elevated, certain exercises can be given in this position which will develop muscles on the concave side, and also shorten muscles on convex side. In addition to these movements, others are also of aid, and massage must be given regularly every day, from five to fifteen minutes, by the surgeon himself, or a trained masseuse or an attendant of some kind. The exercises are to be given not empirically, but with a clear understanding that the object of the treatment is to shorten long muscles and lengthen short muscles, to restore the pelvis to its normal position, and to erect upon it a firm, healthy spine. After this has been accomplished, relapses must be prevented. The treatment is intended first to develop weaker muscles, to prevent rotation, and to avert relapse.

DR. J. P. MANN said that over one thousand different forms of exercises have been collected for the treatment of scoliosis. That is one of the reasons why the treatment does not produce better results, and in giving a basis upon which these deformities can be healed scientifically, Dr. Rugh has done the right thing. There are some other things, however, in the treatment of scoliosis to be borne in mind. In the first place, all cases of scoliosis arise from some local lesion or defect, from some constitutional condition, or, it may be, from a combination of both. In a case of rachitic scoliosis, or in a case in which there is a vertebra that has not developed or several vertebræ—and cases have been reported in which there has been entire absence of two or three of the vertebræ and ribs and clavicle—in such cases as these, of course, the treatment must be entirely different from that in cases of scoliosis due to some local condition. Take some local condition: A child has infantile palsy; the leg is shortened thereby, and from the malposition that the child takes, a scoliosis gradually sets in. Again, some set of muscles around the spine will be affected by paralysis. This is another local condition that may cause scoliosis. These instances sufficiently indicate that the trouble may come from constitutional and also from local causes. When these cases present themselves, the spine is either flexible, and we can straighten the curve more or less, or the spine is fixed and we cannot straighten the curve at all. In some of these spines, from changes in the bones, from pressure and from absorption of the disc of cartillage between the vertebræ, bony ankylosis takes place, making a rigid spine. It is useless in cases of this kind to attempt by any form of either exercise or apparatus, to cure the deformity. It is not useless, however, to try to limit the further progress of the primary curvature or any secondary curvatures that may occur. In the treatment of the flexible cases the plan that Dr. Rugh has outlined certainly gives a good basis to start from. No man can pretend to remember one thousand different forms of exercise, because they do not proceed from any scientific basis. It is merely a feat of memory to treat cases with them, so that with a definite form of exercise, in these cases in which there is flexion of the spine, the surgeon may hope to bring about arrest of the condition in the worst cases and to cure in some of the cases that are not so bad.

As to mechanical treatment: If the patient can be kept under the surgeon's care—that is the flexible cases, when the exercises can be directed and attended to by the patient—no mechanical form of treatment is wise. But, when the patient is not accessible to the physician, or when there is no person to properly direct such exercises, a suitable brace will help to arrest the progress of the trouble.

DR. BERTHA LEWIS said that before proceeding with the eight primary movements of the spine described, it as necessary to adopt a method of treatment that will promote the efficiency of the circulatory and respiratory functions, and which, at the same time, does not overlook the fact that the endeavor to improve the muscles, may succeed at the expense of both heart and lungs. To secure the best results, the physician and not the gymnast is the best person to conduct all remedial exercises, provided he or she has been fitted for this work and possesses an interest and patience that are necessary to carry it to successful ends.

The work of Mr. Bernard Roth, of London, is a striking illustration of what can be done on these lines. The "keynote" of his treatment consists first in developmental exercises until the tone of all the voluntary muscles of trunk and limbs has been raised to a working value, by *consecutive* daily treatments, for a period of not less than three months. These are to be followed by prescribed exercises that may be carried out at home. Not only does Mr. Roth require the greatest accuracy and precision in each exercise, but every movement that the patient takes, and her carriage in walking or sitting at rest are cared for. Of equal importance as a remedial measure is the dress of the patient, not merely while exercising, but also that habitually worn should be loose enough for perfect freedom of motion.

With the exception of the work done in the Swedish Institutes, where the Ling system is used, Dr. Lewis has seen no work that produced such successful results as Mr. Roth obtained, and which are largely the result of his careful personal treatment of each case. The orthopedist is no more justified in sending a case of rotary lateral curvature to a gymnasium than in sending a patient to a druggist with a diagnosis and allow the latter to select the remedy.

DR. MATHILDA K. WALLIN, of New York City, said that the special movements referred to were not at all new to her, because being brought up in Sweden and a graduate of the Royal Gymnastic Institute, she was already familiar with them. She had, in fact, been taught no others as the primary move-

ments of the trunk, the flexion and extension of the back, the rotation, the circumduction and the side flexion, although the same terms were not used. All the exercises were, according to Ling's system and teachings, divided into the so-called "fundamental positions," and from those the movements or positions as "derivative"—the idea is the same, the working basis, so to speak, the same; only the terms differ.

It has been said that there were too many exercises, but the point is to have the right ones, or to be able to select the right and beneficial ones in each case; to discard the poor ones and use only those that are best. Many of the exercises are used without proper discrimination and are worthless. Physicians ought to be *thoroughly* educated in these matters before attempting to use the exercises in the treatment of scoliosis. They ought to know all the different exercises, not only those of one system or set of gymnastics found in text-books, but they should know them all; their action, their mechanism, when to apply them and how to apply them in all the different cases.

As has been said and emphasized, a patient should never be sent to a gynasium for the treatment of scoliosis or for any treatment. First of all, the gymnasium people do not know anything about the pathologic conditions, as a rule; they do not know how to treat a patient, who may often grow worse instead of better; and secondly, it should be understood that a gymnasium is for well people who wish to keep their health and strength and for those who need general development.

There is no question that gymnastics constitute the only measure or the best measure in the treatment of lateral curvatures of the spine, and the gymnastics should not be too *light*, either, after the general development and muscular tone are first obtained, nor too heavy or too strong.

Of all the different systems, there is none that compares with the so-called "self-correcting method," combined with the Ling system. If the two are combined the results are greater or more successful than by any other system; but it takes an immense amount of time; the patients have to work steadily, and some give up, in fact, the whole day to it. The system is carried on in Norway, and is hardly known outside of that country. An apparatus similar to the suspension apparatus is used, each child having its bench for resting and a belt with handles to take hold of for support and fixation of the shoulders. The idea, in a few words, as it is impossible to describe it intelligently without demonstration of the movements, is that the patient, in a fixed and correct position, by the efforts of his own will and work—certain movements—shall strive and be able by this muscular effort to steadily extend, correct and straighten the spine and its curves. Wonderful results may be accomplished by this method, in combination with Ling's gymnastics, but the patients come and work almost the whole day, with proper rest between the exercises. Of course they are almost all children, and come for the purpose of being cured and can generally afford the time.

DR. BENJAMIN LEE said that with regard to the general question of scoliosis or rotary lateral curvature, he has long been of the opinion that the primary curvature does not, as a rule, take place in the dorsal region, but in the lumbar region and he agreed heartily with the remarks as regards the importance of establishing a firm basis for the spine in the pelvis. It is necessary to correct the deformity of the pelvis in order to correct the deformity of the spine that rests upon it. It is therefore Dr. Lee's rule in the treatment of these cases, and especially of those seen early, to pay especial attention to the lumbar portion of the spinal column and to correct any deformities and irregular muscular contractions that exist in the lumbar region and in the upper femoral region. There are in almost every case of lateral curvature contractions more or less marked of the abductors and of the psoas muscles. Attention should be directed to these groups of muscles. As regards the personal corrective treatment alluded to, it is Dr. Lee's habit to instruct patients to make use several times a day when at home of certain postural treatment, which after a little time they are able to carry on quite intelligently themselves, and this proves an important addition to the treatment in the gymnasium.

As regards the cure of lateral curvature everyone knows that to attempt to cure advanced cases of lateral curvature of the spine is to undertake an impossibility, that is to say, to restore the patient to symmetry; but there are other things than symmetry to be considered in a patient suffering from lateral curvature. Very serious conditions of the lungs and of the heart are present as a result of advanced lateral curvature, and no case is so advanced that the patient may not be given reasonable hope of checking further deformity and of so increasing the chest-capacity as to relieve the heart and lungs from at least a portion of the disability under which they are suffering. The physician is, therefore, warranted in undertaking the treatment of cases of very serious deformity, when he cannot at all hope to restore the patient to symmetry, with the expectation of increasing the chest-capacity and in that way relieving the pressure on the heart and lungs.

DR. YOUNG said that there is a difference of opinion as to whether or not right lateral scoliosis is the most common form of spinal curvature. Abroad left lumbar scoliosis is said to be the most common and in this country right dorsal scoliosis, sixty-six per cent. of these occurring to about thirty-three per cent. of the left; the left lumbar then being still less frequent than the left dorsal. Dr. Young's remarks were confined entirely to the treatment of the atonic or mild functional

cases of scoliosis, following the distinction made by Dr. Willard, of cases of functional lateral curvature and those in which rotation has occurred. A picture was shown of a model with a curvature, who had been posing for two years, standing constantly for long periods upon the right limb and in this way developing a left primary scoliosis.

DR. A. O. J. KELLY read a paper upon

"THE NEURON."

and exhibited specimens and diagrammatic representations of its morphologic characteristics.

[See page 711].

DISCUSSION.

DR. CHARLES K. MILLS said that the word "neuron" was first used about 1884 by Professor Wilder of Cornell University, who applied the term to describe the cerebrospinal axis, but afterwards discarded this usage for "neuraxis." From some remarks made a few months ago by Professor Wilder, he seems inclined to return to the use of "neuron" for cerebrospinal axis. Waldeyer, about 1891, suggested the word neuron in the sense used by Dr. Kelly. The term itself and the ideas that circle around it have a certain fascination; even the mere use of the term has done something to clarify our ideas with regard to the structure and functions of the nervous system. Dr. Mills was personally inclined to the views as to the terminology of the nerve-cell suggested by Schäfer, which have been adopted by Donaldson of the Chicago University. In teaching and writing Dr. Mills largely disregards the use of the word "neuron," but it is necessary to use it as a synonym, at least, as it has doubtless come to stay. A neuron after all is a nerve-cell. Accepting it in Waldeyer's sense, as used in describing the anatomic nervous unit, it is the nerve-cell and all of its processes, both dendrites and axis-cylinders. The word "neuron" is certainly sometimes convenient in description, and yet this convenience in its use may occasionally lead to trouble, particularly in the description of such a complicated nervous apparatus as the auditory, when it becomes necessary to speak of neurons of the first order, second order, third order, etc. In this way more or less confusion in teaching and writing may arise. Physiologic misapprehension may result from laying too much stress upon the neuron as an independent anatomic unit. The discovery that the neurons, or nerve-cells are independent anatomic units has let in more light upon nervous structure and action both physiologic and pathologic than anything that has been done in recent years. It must not be forgotten, however, that there are myriads of these nerve-cells in the nervous system, and that while they are independent anatomic units (and this point should be strongly emphasized) only in rare instances are they functionally independent. They are arranged together in special groups, and have many elaborate relations to each other, and therefore, in the physiologic sense little or no independence of action.

When it is recalled that only a few years ago the farthest shore to be reached in the knowledge of nervous structure was indicated by the five or six cortical layers of Meynert and Bevan Lewis, and that now in a single stratum of a single layer of the cortex some thirteen or fourteen independent systems of cells and fibers can be traced, one cannot but be impressed with the great value of the studies of the neuron or nerve-cell, made possible by new methods of staining. What such discoveries will lead to in the future no man can tell. Dr. Kelly has indicated in a few directions the results that have already been achieved, particularly in the pathology of chronic alcoholism and some of the forms of dementia.

DR. F. X. DERCUM said that to him terminology is of secondary importance. It is the substance of one's thoughts which is of the most significance. He held that the term neuron, if used at all, should be applied to the nervous integer and not to a mere part thereof. Schäfer's suggestion to call the nerve-fiber the neuron would lead to endless confusion.

The term neuron should be applied to the nerve-cell, including all of its processes, both the dendrites and the neuraxon. The word cell should be restricted to the cell-body. The dendrites are of course a part of the cell, just as the pseudopoda of the ameba are part of the cell. Still it appears better to speak of them separately as dendrites, just as we speak of the process that forms the nerve-fiber as the axon.

These facts have radically changed our conceptions of the nervous system. We no longer speak of cells and fibers, of trophic or other centers, but regard the nervous system as made up simply of cellular elements, as are all the other tissues.

Our misconceptions in the past have been largely due to our physical impressions. We often reason automatically without stopping to think whether our conceptions are legitimate. Thus when thinking of the nerve-cell, we habitually call to mind a stained hematoxylin or carmine preparation, or now, perhaps, we form a mental picture of the blackened spider-like appearance of the cell as stained by the Golgi method. These conceptions have led us to regard the nerve-cell as something absolutely fixed. The truth is, the nerve-cell is a minute mass of protoplasm with living extensions running from it in various directions, and this conception leads naturally to the idea that the nerve-cells possess some power of mobility. This is as interesting a suggestion as any of the others that are conveyed by these new facts. It is very probable that the nerve-cells have some real mobility, although Cajal suggests that this is indirect. He makes the neuroglia cells the active integers. It seems to be far more rational—far more in keeping with what we know of cell-

life—to accept the view that the nerve-cells have independent movement.

There is one observation made by a German investigator, Wiedersheim, in one of the transparent enteromostraca, which proves absolutely that the nerve-cells in some of the lower forms really do move.

The possibilities that the movement of the nerve-cell opens up are exceedingly interesting.

Dr. J. K. Mitchell said that innumerable suggestions arise for possible applications of the theory of the neuron. The conceptions of interference with transmission of nerve-influence that can be deduced from the infinite complexity of the neuron—communications are much wider than in the old, ruder conception of the transmission by nerve-cells practically united into one group—suggests how very small disturbances of the neuron connections might make very great change in the amount and character of transmission of influence, and infinite possibilities in the subject of the regeneration and degeneration of so many minute and intricate fibers spreading in various directions.

Dr. A. O. J. Kelly said that the term neuron, being more or less new, has a certain fascination, and having been suggested to describe a structure, the individuality of which heretofore was not even suspected, it has justification in fact and will persist. It is doubtless its availability that has caused its almost universal adoption. In the paper read, the word has been used to describe the entire cell, including its prolongations, and not after the very confusing manner that Schäfer has seen fit to employ it. As knowledge increases, this terminology may be changed, but probably not materially. The terms that have been used are those at present more generally adopted. Certain of the physiologic and pathologic suggestions, to which allusion has been made, have opened up new thoughts, and it is just beginning to be understood how much the future may have to offer.

PERISCOPE.

NEWS AND MISCELLANY.

That impairment of the integrity of the nervous system, and especially of the pneumogastric nerves, leads to some form of pulmonary disorganization and very frequently to that condition which is known as pulmonary consumption, is contended by Dr. I. J. Mays, in the *Journal of Nervous and Mental Diseases.* Owing to their manner of actions, the poisons may be separated into two groups, those which bring about a slow intoxication of the nervous system, and which induce a crop of chronic pulmonary diseases; and those which act more or less acutely and which produce a crop of acute diseases of the lungs and which subsequently merge into well settled phthisis. The former group includes alcohol, syphilis, mercury, lead and uric acid, while the latter comprises typhoid fever, diphtheria, measles, whooping-cough, mumps and influenza. To these poisons might be added those which engender beriberi, pellagra and celebro-spinal meningitis.

While the ultimate trend of all these poisons is to undermine the nervous system, and to bring on pulmonary disorder, the chronicity or the acuteness of the latter process depends in a large measure on the virulency of the poison, on the amount and frequency with which it is introduced, on the persistency of its action, and on the facility or difficulty with which it is excreted by the body. Alcohol is eliminated rapidly through the lungs and the kidneys, and would not be attended by such serious danger to the economy, were it not for the fact that the chronic "tippler" takes it frequently and for a protracted period. In the case of syphilis, a single injection is capable of salivating the whole body for a long time. Mercury and lead enter the body gradually, being inhaled or ingested, and are eliminated exceedingly slowly. A comparatively small quantity of these poisons therefore suffices to work grave and irreparable injury to the nervous system. Of all the poisons in the first group, uric acid is probably the most harmless, and being a normal constitutent of the body, it only becomes dangerous when present in excessive quantity and for a protracted period. The members of the second group also differ somewhat in the rapidity with which they generate pulmonary disintegration. The poisons of whooping-cough and influenza having a special affinity for the pulmonary nerves, bring about this result more rapidly and in a larger number of instances than is the case with those of typhoid fever, diphtheria, measles and mumps, whose action on the nervous system is probably more general.

It is hardly necessary to state that well matured bananas that have not begun to decay are a very wholesome and nutritious food. No more than that the biggest apples or pears always are the best, are the biggest bananas the finest flavored; on the contrary, the larger they are the more mealy they taste. The cultivation of bananas, although it has in the last ten years assumed gigantic proportions, may still be said to be in its infancy. Almost every part of the plant can be used for some useful purpose; the stalk forms an excellent material for the manufacture of paper, or

the fibre might be extracted; the peel of the fruit will make excellent indelible ink; the green fruit dried can be converted into wholesome flour. The fruit, when ripe, consists of seventy-four per cent. of water, of the remaining twenty-six parts twenty are sugar and two gluten of flesh forming food. Hence like rice though exceedingly nutritious, it requires the addition of some more nitrogenous material. Green bananas, boiled tender, if given to the hens cut up, will make them lay more eggs than any other food. Dried bananas, or banana figs as they are called, are now in the market, and will undoubtedly soon be a great article of trade as soon as found by the schoolboy. They are sweet, wholesome and nourishing.—*The Sanitarian.*

Any form of exercise or sport which makes serious demands on the attention, on quickness of eye and hand, and on endurance, ought to be taken up by people who have reached middle life, and are engaged in sedentary occupation, only with great circumspection. The lesson has been learnt by Alpine climbers through many bitter experiences. It is pretty generally held by them that most of the fatal accidents in mountain climbing occur through the failure at the critical moment of some man who has taken to mountaineering too late in life, and who is, perhaps, also out of condition. An old dog cannot be taught tricks, according to the proverb; and though it is disagreeable to have to realize that we have passed the age when we can excel in a new pastime requiring special skill to avoid accident, and youthful adaptability and elasticity to avoid overstrain, it is the part of wisdom to accept the inevitable. It is said that a first-rate tennis player will remain first-rate for twenty years or more, but no man ever became first-rate who did not begin as a lad, almost as a boy. There is no reason why middle-aged men, and even those who have passed middle-age, should not take to cycling; but it should be with a frank recognition of the limitations which age imposes. Great speed, long distances, and hill climbing put a strain upon the constitution, and will find out the weak places—the parts of the system which are aging faster, perhaps, than the rest—the heart, it may be, or the vessels of the brain. So, also, in regard to riding a bicycle in crowded thoroughfares, the strain on the attention is considerable, the risk not small, if a man has lost the quickness of youth, or of wont from youth.—*British Medical Journal.*

The practical importance of those forms of edema which are not dependent upon disturbances of circulation or chronic nephritis has been recently discussed by Dr. B. Beer, of Vienna. He says, according to *The New York Medical Times*, that a variety of edema in the superficial layers of the skin is observed where the patients complain that the pressure of the clothes, etc., causes a temporary and superficial edema, which with paresthesia, remains for quite a while in the skin. In certain exanthems, dermographismus and urticaria, these appear more distinctly and extend into large patches. The skin may be thrown into folds after they have disappeared. More deeply seated edema of an inflammatory origin may be due to pus formation, where with formation of but a small pus focus the edema may be extensive.

In the subcutaneous cellular tissue or the perimysium from toxic influences considerable edema may be noticed as with dermomyositis, but without apparent pus formation. These may be followed by absorption of the fluid, formation of fat or cellular tissue, with consequent cicitricial retraction, which is most distinctly observed in scleroderma. Sometimes these retractive cicatricial bands lead to the imbedding of fat, with simulation of lipomata. By this same process affecting the muscular tissue an apparent muscular atrophy is produced, which will disappear under treatment by massage. A still more serious termination is the formation of the cutis laxa and the cutis atrophica of the dermatologists. The writer called attention to a case which he had observed where a partial acromegalia had developed after a fall upon the right arm; an edema of a gelatinous appearance had developed upon the face, chest, etc., which disappeared after the administration of alkalies and treatment by massage. The cause of edema is frequently to be sought in a derangement of the lymph currents.

Dr. Buka, Professor in the Polytechnic College at Charlottenburg, near Berlin, has been successfnl in obtaining Roentgen rays of such intensity that he has been able to photograph objects at a considerably greater distance from the tube than heretofore. In his opinion this result is a distant improvement in the medical application of skiagraphy; for, he says, the apparent distortion of the bones are more truly rendered by the shadow pictures the further the objects are placed from the source of the rays. Very probably, too, the burning of the skin, which has been frequently observed as an effect of the rays, will be lessened by greater distance.—*British Medical Journal.*

The Alumni of Jefferson Medical College feted the recently elected president of the Board of Trustees, at the Hotel Bellevue. Dr. A. K. Minich acted as chairman of the banquet and Mr. Potter's remarks on the healing art in general and on Jefferson College in particular, were received with hearty applause. Addresses were made by William M. Singerly, Dr. S. Weir Mitchell, Prof. W. M. L. Coplin and others. Some of those present were; L. Clarke Davis, Judge Arnold, Col. James Elverson, Hon. H. K. Boyer, Prof. John H. Brinton, Prof. H. C. Chapman, Dr. John C. Da Costa, Dr. P. Chalmers Da Costa, Prof. E. P. Davis, Prof. F. X. Dercum, Prof. G. E. De

Schweinitz, Prof. R. Douglass, Prof. Austin Flint, Prof. W. S. Forbes, Simon Gratz, Prof. H. F. Hansell, Prof. Hobart A. Hare, Prof. W. J. Hearn, Prof. W. J. Holland, Prof. Orvill Horwitz, Senator Penrose, Prof. J. B. Roberts, Prof. W. W. Keen, Charles H. Krumbhaar, Prof. D. B. Kyle. G. M. Lecca, the Italian Consul; Prof. E. E. Montgomery, Dr. J. Thorington, Louis C. Vanuxem, Prof. H. A. Wilson and many other notable men.

Relations of gall-stones to cancer of gall-bladder. Dr. Kelynack, from considerations of the records he has had access to and observation of cases, is driven to the following conclusions: 1. Gall-stones are met with in from six to ten per cent. of all cases submitted to a pathological examination. 2. Primary cancer of the gall-bladder occasionally occurs associated with gall-stones. 3. In the large majority of cases primary cancer of the gall-bladder is associated with gall-stones. 4. The presence of gall-stones in certain subjects, and doubtless in connection with other predisposing conditions, favors a cancerous development. — *Practitioner, April* 1896.

The culture and inoculation of coli bacillus and its toxines, to determine whether immunity can be conferred by inoculation, has recently been investigated by M. M. Albarrard and Mosuy. The importance of the investigation lies in the fact that the surgeon producing wittingly a urethral or vesical trauma in patients whose urine contains this organism, necessarily exposes the patient to the risks of systemic infection; and to be able by previous serum inoculations to induce immunity from the coli bacillus infection would be of incalculable advantage. The results of the work here reported are of an encouraging nature, and the authors believe that by subcutaneous and intra-vesical injection of the serum good results have been and will be obtained.—*Ann. des Mal. Genito-Urin.*

The growing practice of sterilizing milk for infants and children, invaluable as this protection is for temporary use during hot weather in cities, often leaves anæmia and tonelessness in its train if its use be persisted in. There is a value in the vital properties of fresh milk not to be produced or retained by any artificial process.—J. MADISON TAYLOR in *Annals of Hygiene.*

A series of experiments by Dr. Mary Sherwood (*Johns Hopkins Hospital Reports*) to test the relative germicidal powers of oxalic acid and potassium permanganate, seems to indicate that the solution of oxalic acid was the real germicide. Using bits of surgeon's silk, dipped in cultures of *staphylococcus pyogenes*, it was found that potassium permanganate, in saturated solutions, did not sterilize them, either at the room temperature or at a temperature of 46° C., by exposure of from one to ten minutes. On the other hand, oxalic acid in saturated solution, at a temperature of 40° to 45° C., sterilized the insected threads exposed to its action for one minute, showing the oxalic acid to be the more powerful germicide.

Suppose a person to be tired out by overwork of any kind to feel nervous, irritable, and worn, to be absolutely certain that bed means only tossing for hours in an unhappy wakefulness. We all know this condition of the body and mind. Turn on the hot water in the bath-room and soak in the hot bath until the drowsy feeling comes, which will be within three minutes; rub yourself briskly with a coarse Turkish towel until the body is perfectly dry, and then go to bed. You will sleep the sleep of the just, and rise in the morning wondering how you could have felt so badly the night before. The bath has saved many a one from a sleepless night, if not from a severe headache the next day.—DR. CYRUS EDSON, in June *Ladies' Home Journal.*

It is a grave mistake for physicians and friends to conceal from a consumptive patient the real nature of the malady after a correct diagnosis has been made, says a writer in *The Health Magazine.* In view of the contagious principle of the consumptive germ and the methods of prevention brought to light through scientific investigation, it is little less than criminal to withhold such facts under the false notion that it might hasten the victim's decline were he conscious of his malady. For the sake of others not only but for his own sake the patient should know the facts, for herein lies the means of protection. After receiving the most explicit instructions regarding the disposal of sputa and dejecta, that the disease may not be communicated to others, the patient should be warned of the possibility of reinfection. Many a fatal case could doubtless have been brought to recovery had not the subject further infected himself as one portion of the lung or other diseased organ progressed toward recovery. We have known many instances where the cases were allowed to use handkerchiefs all night long, in which to expectorate. The sputa becoming dry could not but prove a prolific source of reinfection when brought to the face as the thousands of bacilli were being liberated from its folds and inhaled by the patient.